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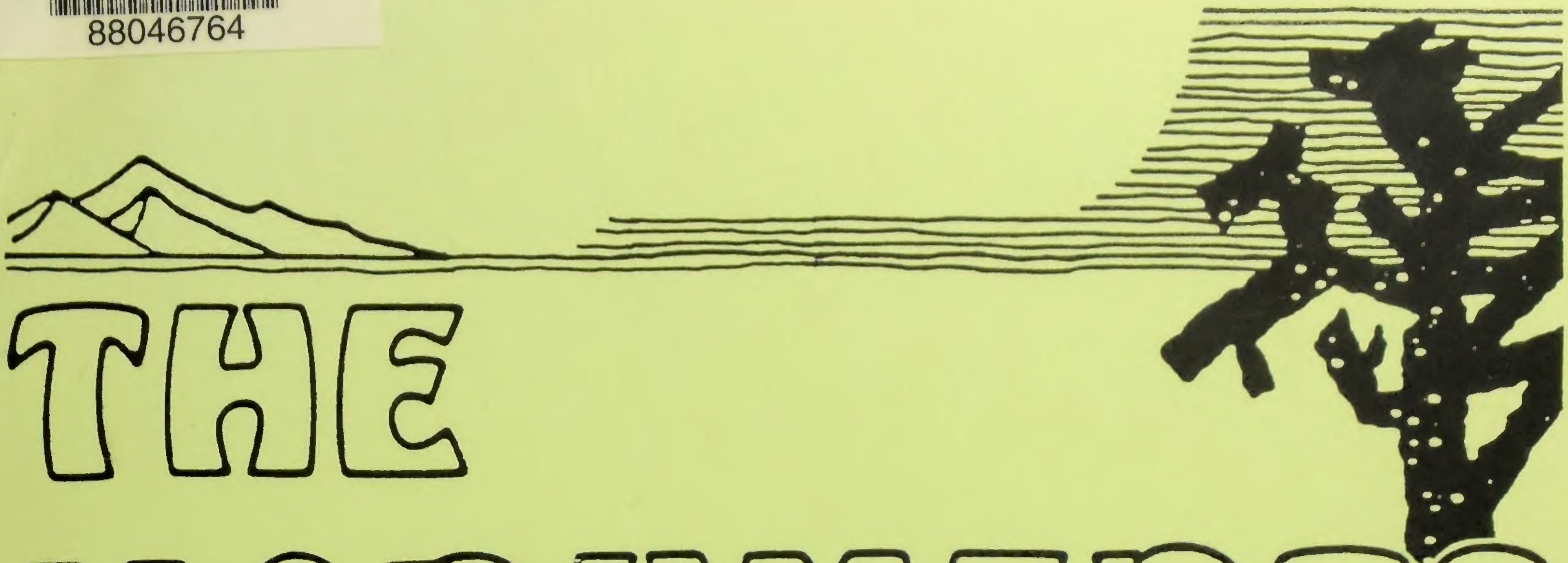

THE MONUMENTS

DRAFT
ENVIRONMENTAL IMPACT STATEMENT

Boundary Adjustments:
Death Valley and
Joshua Tree
National Monuments

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C3443
1988

Bureau of Land Management
California Desert District

July, 1988

March 3, 1849

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

CALIFORNIA DESERT DISTRICT
1695 Spruce Street
Riverside, California 92507

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

IN REPLY REFER TO:
1600
(CA-060.2)

Dear Reader:

The National Park Service has identified five proposed additions to the Death Valley and Joshua Tree National Monuments in California. The purpose of the additions, which collectively total 247,329 acres, is to adjust the boundaries of the Monuments so that the boundaries are more manageable, and so that natural areas and ecosystems currently bisected by the boundary are managed under a single jurisdiction.

The decision to accept or to reject the proposed transfer will be based on a number of factors, including effect on the natural environment, input from the public, and recommendations of the California Desert District Advisory Council.

We are providing a 90-day period for public review of the Environmental Impact Statement. Please be sure to return your comments to this office no later than October 27, 1988. Send you comments to the following address:

California Desert District
Bureau of Land Management
ATTN: Monuments EIS
1695 Spruce Street
Riverside, California 92507

In addition, six public hearings will be held. Hearings will be located in Riverside (September 19, 1988), Palm Springs (September 20), Ridgecrest (September 21), Lone Pine (September 22), and Shoshone (September 23). Five of the hearings will begin at 7:00 p.m. In addition, a 10:00 a.m. session will be held in Riverside. Hearings will be held at the addresses listed on the hearings information page.

Sincerely,

Gerald E. Hillier
District Manager

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1988

ENVIRONMENTAL IMPACT STATEMENT
FOR
BOUNDARY ADJUSTMENTS
DEATH VALLEY AND JOSHUA TREE NATIONAL MONUMENTS

Prepared by

Lead Agency	Bureau of Land Management California Desert District
Cooperating Agency	National Park Service Joshua Tree National Monument Death Valley National Monument
Cooperating Agency	Bureau of Mines Western Field Office, Spokane

The Bureau of Land Management, in cooperation with the National Park Service and the Bureau of Mines, is considering the transfer five parcels of public lands currently managed by the Bureau to the Death Valley and Joshua Tree National Monuments. The purpose of the additions is to adjust the boundaries of the monuments so that they are more manageable, and so that natural areas and ecosystems currently bisected by the boundary are managed under a single jurisdiction.

About 24 percent of the land proposed for transfer is classified by the BLM's California Desert Conservation Area Plan as either multiple use class M (moderate use) or class I (intensive use). The management of these land after the transfer would not necessarily be in conformance with the Desert Plan. "If a proposed action is not in conformance, and warrants further consideration before a plan revision is scheduled, such consideration shall be through a plan amendment" (43 Code of Federal Regulations (CFR) 1610.5-3). As a result, the transfer is being processed through a plan amendment, and a decision will be made only at the conclusion of that process.

The preferred alternative is to transfer the parcels to the Park Service. Two of the parcels would be transfered as proposed. Three would be transfered with boundaries modified as a result of the findings of this EIS. A total of 210,970 acres would be transfered.

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Ed Hastey
CALIFORNIA STATE DIRECTOR

For Further Information Contact:

Gerald E. Hillier, District Manager
California Desert District
Bureau of Land Management
1695 Spruce Street
Riverside, California 92507

HEARINGS INFORMATION PAGE

Six formal public hearings will be held during the public review. All hearings will begin at 7:00 PM, except for a 10:00 AM hearing to be held in Riverside.

The hearings will be conducted by a hearings officer, and will be recorded by a court reporter. The purpose of the hearings will be to take oral testimony concerning the technical adequacy of the draft environmental impact statement. Written comments may be submitted at the hearing as well. In addition, BLM staff will be available to answer questions before and after the hearing, and during breaks.

Hearings will be held at the following dates, times and locations:

Date	Time	Location
September 19, 1988	10:00 AM and 7:00 PM	Holiday Inn, Riverside Riverside, California
September 20, 1988	7:00 PM	Rodeway Inn Palm Springs, California
September 21, 1988	7:00 PM	Carriage Inn Ridgecrest, California
September 22, 1988	7:00 PM	To be announced Lone Pine, California
September 23, 1988	7:00 PM	To be announced Shoshone, California

SUMMARY

Introduction

On May 19, 1988, the Western Regional Office of the National Park Service proposed to the California State Office of the Bureau of Land Management (BLM) that five parcels of land currently under BLM jurisdiction be transferred to the Joshua Tree and Death Valley National Monuments. The parcels, and the acreage of each, follow:

Parcel 1: North Death Valley, on the extreme north end of Death Valley National Monument, 84,389 acres. This area is a topographic extension of Death Valley, and its transfer would enhance its manageability.

Parcel 2: Hunter Mountain, on the western boundary of Death Valley National Monument, 26,687 acres. Inclusion of this parcel in the monument would bring all of Hunter Mountain under the jurisdiction of a single agency.

Parcel 3: Pyramid Peak, on the eastern boundary of Death Valley National Monument, 14,268 acres. A more definable monument boundary would be established and the entirety of Red Ampitheater and Pyramid Peak would be brought within the monument.

Parcel 4: Greenwater Valley, on the eastern boundary of Death Valley National Monument just south of Pyramid Mountain, 117,505 acres. Transfer of the large Greenwater Valley Parcel would bring the entire Black Mountain watershed within the monument, and would establish a readily-identifiable road as the monument's eastern boundary.

Parcel 5: Pinto Basin, on the southern boundary of Joshua Tree National Monument, 4,480 acres. This proposed BLM wilderness area is topographically related to adjacent Monument lands.

Amendment to California Desert Conservation Area Plan

About 24 percent of the land proposed for transfer is classified by the BLM's California Desert Conservation Area Plan as either multiple use class M (moderate use; 38,800 acres) or class I (intensive use; 19,646 acres). The management of these land after the transfer would not necessarily be in conformance with the Desert Plan.

BLM's planning regulations require that all actions must conform to the approved land use plan. "If a proposed action is not in conformance, and warrants further consideration before a plan revision is scheduled, such consideration shall be through a plan amendment" (43 Code of Federal Regulations (CFR) 1610.5-3). As a result, the transfer is being processed through a plan amendment, and a decision will be made only at the conclusion of that process.

Issues

Ten issues have been considered. These are briefly summarized below:

1. The effect of transfering jurisdiction on sensitive wildlife species, particularly the Desert Bighorn Sheep.
2. The effects on sensitive plants, particularly at the Sand Spring area of critical environmental concern.
3. The continued viability of grazing operations, particularly on Hunter Mountain.
4. The future of BLM and Park Service wild horse and burro management and removal programs.
5. Availability of Hunter Mountain to Native Americans for harvesting pinyon nuts. Management of historic and prehistoric cultural sites.
6. Status of existing land use authorizations (e.g. rights of way for utility lines and roads, public water reserves) under Park Service management.
7. Capability of each agency to establish and maintain a field presence in the parcels.
8. The future of access to the parcels by motorized vehicles. The future of hunting, trapping, and camping.
9. Effects of a change in the number of acres recommended for wilderness designation.
10. The effect of transfering jurisdiction on future mineral development of the parcels. BLM and Park Service mineral regulations are significantly different. Greatest effects would occur in the Hunter Mountain, Greenwater Valley, and Eagle Mountain Alternative parcels.

Alternatives Studied

Five alternatives are considered in detail by the environmental impact statement. These include the following:

Alternative A: Park Service proposal.

Alternative B: Modified Greenwater Valley parcel (excluding a highly mineralized area in the Ibex Hills).

Alternative C: Eagle Mountains Alternative (an additional 25,000 acres proposed for transfer adjacent to the Pinto Basin parcel).

Alternative D: Modified Pyramid Peak parcel. Includes an additional portion of BLM's Funeral Mountains wilderness study area.

Alternative E: No Action (lands would not be transfered, but would continue to be managed by BLM under the guidance of the California Desert Conservation Area Plan).

Major Impact Conclusions

Table S-1 summarizes the impacts that would result from implementation of each of the five alternatives.

BLM Preferred Alternative

The preferred alternative is not a final decision, but simply indicates the Bureau's present leanings. It must be one of the alternatives studied in this Environmental Impact Statement.

The Bureau's preferred alternative is to transfer the Hunter Mountain and Pinto Basin parcels to the Park Service as proposed in the original NPS proposal. The Greenwater Valley and Pyramid Peak parcels would also be transfered, but as modified by alternatives B and D, respectively. The North Death Valley parcel would be transfered as proposed, except as modified by a mitigation measure. That modification excludes about 5,000 acres around the highly mineralized Crater area.

Table S-1
Summary of Impacts[1]

Resource	Alternative A by parcel[2]					Alternative			Alternative E by parcel				
	1	2	3	4	5	B	C	D	1	2	3	4	5
Wildlife	+	++	0	0	+	0	+	0	0	-	+	+	0
Botany	+	0	+	+	+	+	+	+	+	0	0	0	+
Grazing	-	-	0	0	0	0	0	0	0	+	0	0	0
Horse-Burro	0	-	0	0	0	0	0	0	0	0	0	0	0
Cultural Res	+	+	+	+	+	+	+	+	0	0	0	0	0
Lands	0	0	0	-	0	0	0	0	+	+	0	+	0
Airspace	0	0	0	0	0	0	0	0	0	0	0	0	0
Recreation													
Primitive	+	+	0	0	+	0	+	0	0	0	0	0	+
Vehicular	0	0	-	0	0	0	--	-	0	0	-	0	--
Hunting	-	0	0	0	0	0	-	0	0	0	0	0	-
Harvesting	0	+	0	0	0	0	0	0	0	+	0	0	0
Wilderness	0	0	0	+	+	+	0	+	0	0	-	-	0
GEM													
Energy	0	0	0	-	0	-	0	0	0	0	0	0	0
Minerals	-	--	--	--	0	--	--	0	0	0	0	0	

[1]
++ Highly positive impact
+ Slightly positive impact
0 Neutral impact
- Slightly negative impact
-- Strongly negative impact

[2]
1 North Death Valley
2 Hunter Mountain
3 Pyramid Peak
4 Greenwater Valley
5 Pinto Basin

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CHAPTER 1

INTRODUCTION

CHAPTER 1

INTRODUCTION

LOCATION

On May 19, 1988 the National Park Service proposed five specific boundary adjustments to the Death Valley and Joshua Tree National Monuments in Southern California. This proposal marked the culmination of several months of discussions between the Park Service and the Bureau of land management to improve the manageability of the monument's borders. It is consistent with the goals of the 1987 memorandum of agreement between the two agencies concerning the addition of public lands managed by the Bureau to the National Park Service.

As a result of the adjustments, 247,329 acres of public lands currently under Bureau of Land Management (BLM) administration would be transferred to the Park Service for inclusion in the two Monuments (see maps 1-1 and 1-2). A total of 242,849 acres would be transferred to Death Valley, while the remaining 4,480 acres would be transferred to Joshua Tree National Monument.

The parcels, and the acreage of each, follow:

Parcel 1: North Death Valley, on the extreme north end of Death Valley National Monument, 84,389 acres.

Parcel 2: Hunter Mountain, on the western boundary of Death Valley National Monument, 26,687 acres.

Parcel 3: Pyramid Peak, on the eastern boundary of Death Valley National Monument, 14,268 acres.

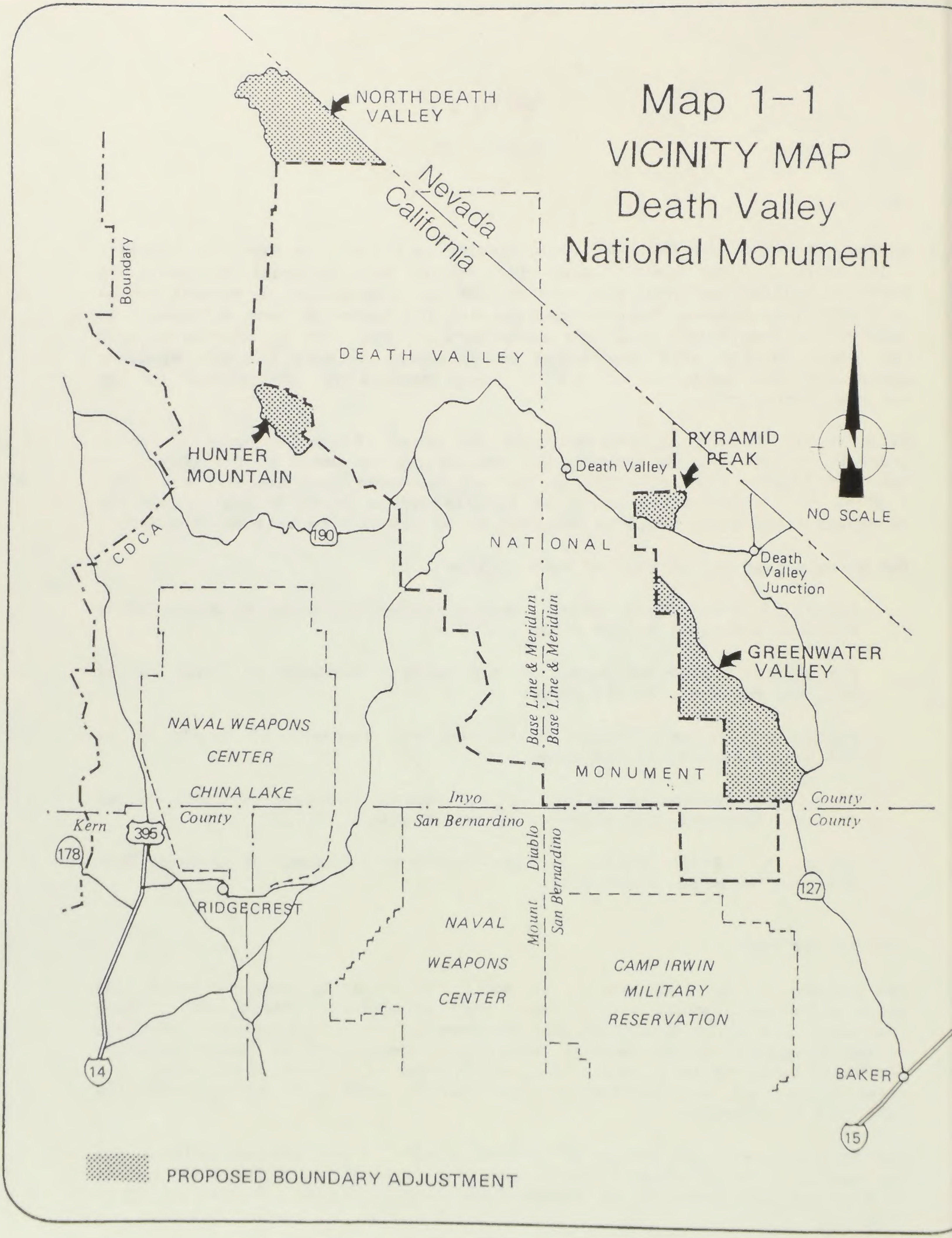
Parcel 4: Greenwater Valley, on the eastern boundary of Death Valley National Monument just south of Pyramid Mountain, 117,505 acres.

Parcel 5: Pinto Basin, on the southern boundary of Joshua Tree National Monument, 4,480 acres.

PURPOSE AND NEED

The purpose of the transfers is to modify the existing monument boundaries where adjustments would provide both more manageable borders, and borders that would not split ecological and topographic units. At present, portions of the boundaries divide natural topographic areas (such as Hunter Mountain and North Death Valley), split the jurisdiction of bighorn sheep, deer, and burro herds, and are located in open desert areas (and consequently are difficult to identify).

The transfers are the result of several months of discussions between the two agencies, during which time six potential expansions of Death Valley and four potential expansions of Joshua Tree were explored. Parcels in which



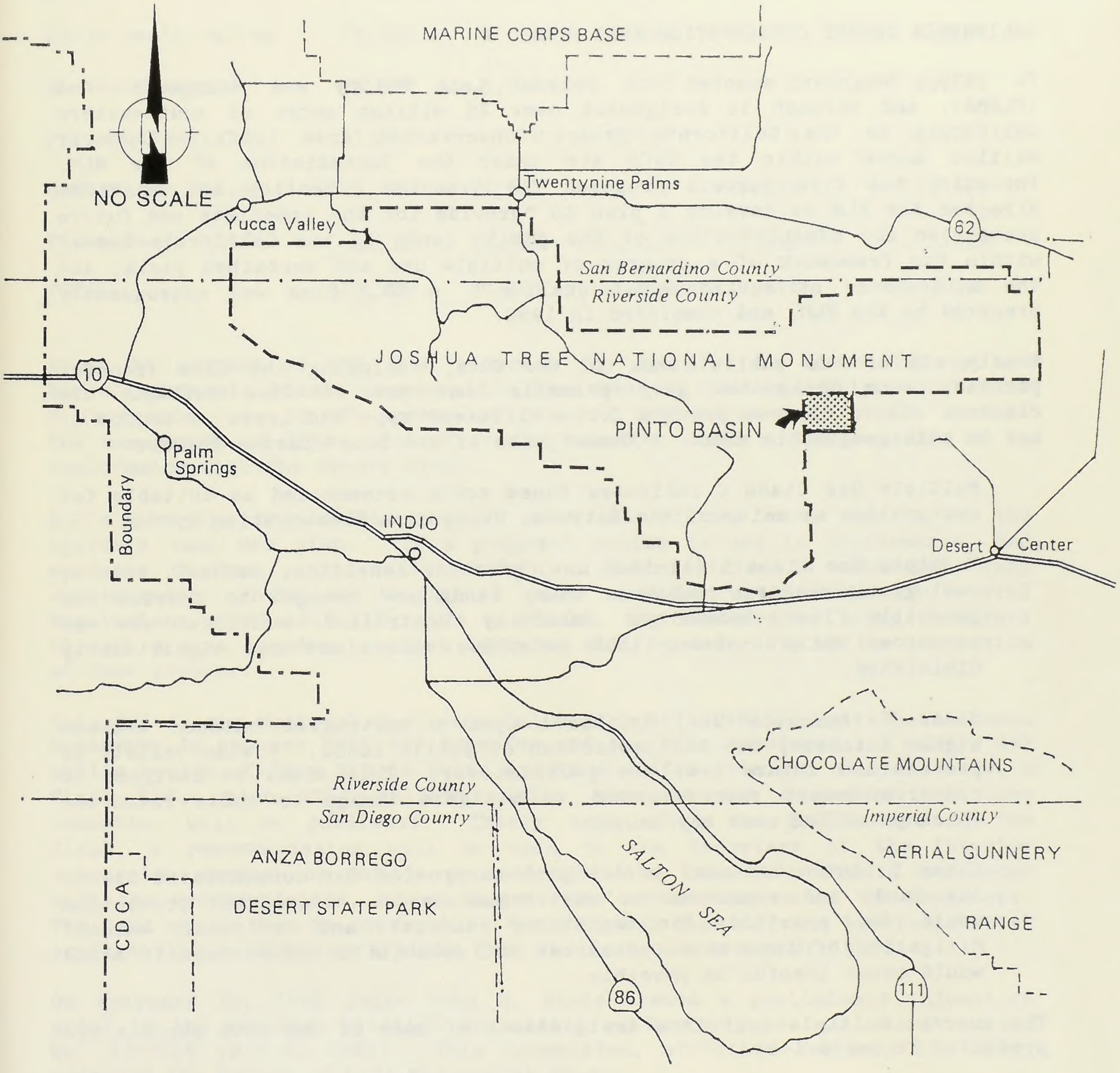
Map 1-1
VICINITY MAP
Death Valley
National Monument

▨ PROPOSED BOUNDARY ADJUSTMENT

Map 1-2

VICINITY MAP

Joshua Tree National Monument



▨ PROPOSED BOUNDARY ADJUSTMENT

ownership is checkerboarded or covered extensively with mining claims were dropped from consideration due to the difficulty of managing this type of land pattern and the high cost of resolving the claims. Other parcels were dropped where it was felt that their inclusion would not enhance the management of either the parcels or the monuments. The five parcels to be analyzed in detail by this environmental impact statement (EIS) are those which were determined to be the most feasible by that preliminary screening process.

The National Park Service formally proposed the boundary adjustments to the Bureau on May 19, 1988.

CALIFORNIA DESERT CONSERVATION AREA PLAN

In 1976, Congress enacted the Federal Land Policy and Management Act (FLPMA), and through it designated over 25 million acres of southeastern California as the California Desert Conservation Area (CDCA). Over 12 million acres within the CDCA are under the jurisdiction of the BLM, including the five parcels proposed for transfer. Section 601 of FLPMA directed the BLM to develop a plan to "provide for the immediate and future protection and administration of the public lands in the California Desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality." A CDCA Plan was subsequently prepared by the BLM, and completed in 1980.

Nearly all of the public lands in the CDCA, including the five transfer parcels, were designated geographically into one of four multiple use classes. These classes provide for a different type and level or degree of use in each geographic area. A description of the four classes follows:

> Multiple Use Class C indicates those areas recommended as suitable for designation as units of the National Wilderness Preservation System.
>
> Multiple Use Class L (limited use) protects sensitive, natural, scenic, ecological resource values. These lands are managed to provide for generally lower-intensity, carefully controlled multiple use of resources while ensuring that sensitive values are not significantly diminished.
>
> Class M (moderate use) is based upon a controlled balance between higher intensity use and protection of public lands. A wide variety of present and future uses are provided for. This class is designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause.
>
> Class I (intensive use) is designed to provide for concentrated use of the lands and resources to meet human needs. Reasonable protection would be provided for sensitive natural and cultural values. Mitigation of impacts on resources and rehabilitation of impacts areas would occur insofar as possible.

The current multiple use class designations of each of the five parcels are presented in table 1-1.

About 76 percent of the lands proposed for transferred were designated as either class C (131,702 acres) or class L (57,181 acres). Management under National Park Service would generally be in conformance with class C and L guidelines.

Table 1-1
Multiple Use Class Designations
(in acres)

Parcel	Class C	Class L	Class M	Class I	Total
North Death Valley	72,709	9,920	1,760	0	84,389
Hunter Mountain	23,597	3,090	0	0	26,687
Pyramid Peak	11,956	0	2,312	0	14,268
Greenwater Valley	23,440	39,691	34,728	19,646	117,505
Pinto Basin	0	4,480	0	0	4,480
TOTAL	131,702	57,181	38,800	19,646	247,329

About 24 percent of the land proposed for transfer is classified by the BLM's California Desert Conservation Area Plan as either multiple use class M (moderate use; 38,800 acres) or class I (intensive use; 19,646 acres). The management of these land after the transfer would not necessarily be in conformance with the Desert Plan.

BLM's planning regulations require that all actions must conform to the approved land use plan. "If a proposed action is not in conformance, and warrants further consideration before a plan revision is scheduled, such consideration shall be through a plan amendment" (43 Code of Federal Regulations (CFR) 1610.5-3). As a result, the transfer is being processed through a plan amendment, and a decision will be made only at the conclusion of that process.

This EIS is the National Environmental Policy Act (NEPA) compliance document necessary to process both the transfer and the plan amendment. A ninety day public review of this EIS is being provided. After the end of the review, a Final EIS, which will contain public comments and responses to those comments, will be published. Thirty days after the publication of the final, a recommendation will be made to the Secretary of the Interior concerning whether or not to proceed with the transfer. Should he concur with the recommendation, he would pass the recommendation to the President. The land could then be conveyed to the National Park Service by Presidential proclamation pursuant to article 2 of the Antiquities Act of 1906.

On February 10, 1986 Judge John H. Pratt issued a preliminary injunction order in the National Wildlife Federation v. Burford, et. al., Civil Action No. 85-2238 (D.D.C. 1985). This injunction, effective February 15, 1986, enjoined the Bureau of Land Management from:

"1(a). modifying, terminating, or revoking, in full or in part, under the Federal Land Policy and Management Act, any withdrawal or classification that was in effect on January 1, 1981, or

"(b). taking any action inconsistent with the specific restrictions of a withdrawal or classification in effect on January 1, 1981 including, but not limited to, the issuance of leases, the sale, exchange, or disposal of land or interests in land, the granting of rights-of-way, or the approval or any plan of operations."

Implementation of the transfer would not be affected by the order(s) of the court.

NATIONAL PARK SERVICE MISSION

If the lands were to be transfered, they would be managed subject to the mission of the National Park Service (NPS). The National Park Service mission differs fundamentally from the multiple use mandate of the BLM. The Act of August 25, 1916, which outlines the broad policy framework for Park Service management, states that the NPS "shall promote and regulate the use of the Federal areas known as national parks, monuments and reservations...by such means and measures as to conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations".

In management of its designated areas to realize this legislative mandate, the Park Service necessarily stresses preservation of resources and restoration of natural conditions. Economic activities such as livestock grazing and mining are generally not consistent with preservation of park values or restoration of natural conditions. Where such uses are authorized, they must be closely controlled to ensure that resource values are not permanently impaired.

Likewise, some recreational activities are incompatible with protection of natural values. Off-road vehicle operation, hunting, and rock collecting affect scenery and remove resources of interest to visitors.

Wildlife management in the national parks is oriented toward restoration of natural habitat condition and natural population levels.

ISSUES SELECTED FOR ANALYSIS

The following are the critical issues this plan amendment addresses. Although a wide variety of resource impacts will be assessed, the analysis will foucs on these issues.

Wildlife

The transfer may affect the way the Federal government manages wildlife, particularly desert bighorn sheep. For example, several wildlife guzzlers (artificial watering sources) have been installed, and are being maintained, in the parcels. The Park Service would maintain the guzzlers but, should the guzzlers be destroyed by a catastrophic event, they would not be replaced.

Botany

An unusual plant assemblage occurs in the North Death Valley parcel, at the Sand Spring and Little Sand Spring Area of Critical Environmental Concern. Two BLM sensitive plants occur in the Pinto Basin parcel.

Livestock Grazing

A portion of the North Death Valley parcel is within the Last Chance grazing allotment. The Hunter Mountain parcel may be a key component of the Hunter Mountain grazing allotment. Although the Hunter Mountain parcel contributes only a portion of the forage produced by the Hunter Mountain allotment, it contains all of the permanent sources of water. Livestock grazing in the parcels would eventually be discontinued after transfer, creating possible impacts on the ranchers.

Wild Horse and Burro

There has been historic wild horse and burro use of the North Death Valley and Hunter Mountain allotments, resulting in numerous impacts on other resources. Several thousand animals have been removed from these parcels in the past few years. However, animals continue to drift into the parcels from outside, so an ongoing removal program is necessary (and underway). Both BLM and Park Service removal policies need to be addressed.

Cultural Resources

Numerous sensitive archaeological sites occur in the parcels. The degree to which an agency can successfully patrol these areas and prevent their deterioration is an important transfer consideration. In addition, Native Americans are concerned about their continued ability to harvest pinyon nuts on Hunter Mountain if it were under Park Service jurisdiction.

Lands

Several existing land use authorizations (for example, rights of ways for utility lines and roads, and public water reserves) have been granted in the parcels, and might be affected by the transfer. The parcels are used by the military for research activities and for low-level military aircraft training exercises. Potential conflicts with the National Wildlife

Federation preliminary injunction must be examined. Finally, the transfers may or may not be consistent with the Inyo and Riverside County general plans and the BLM CDCA plan.

Management Presence

The capabilities of each agency to establish a field presence in the parcels needs to be examined. The Park Service historically has been able to place more employees in the area of the parcels, but the recent doubling of BLM's ranger force has significantly improved BLM's management presence.

Recreation

Existing vehicle access to the parcels (particularly Greenwater Valley) may or may not continue after a parcel. Hunting and trapping are popular on Hunter Mountain, but would be prohibited under Park Service management. Undesignated vehicle camping sites exist on Hunter Mountain, and could be replaced with designated sites, or might be phased out entirely.

Wilderness

About 53 percent of the parcels have been recommended by BLM as suitable for designation as units of the National Wilderness Preservation System. The percentage could change after transfer. A different acreage under wilderness management could have important repercussions for other resources.

Geology-Energy-Minerals

The transfer of these areas to Park Service management would curtail future mineral exploration or development of the parcels. Under Park Service management minerals would no longer be managed under the unnecessary or undue degredation provisions of 43 CFR 3809 and 3802 but under the more restrictive measures of 36 CFR 9.A that are the Park Service's regulations for mining in a park or national monument. This issue would be particularly significant in the Hunter Mountain, Greenwater Valley, and Eagle Mountain Alternative parcels.

CHAPTER 2

ALTERNATIVES

CHAPTER 2

ALTERNATIVES

ALTERNATIVE A:
PROPOSED ACTION

Five parcels of land currently administered by the Bureau of Land Management, United States Department of the Interior, would be transferred to the National Park Service, United States Department of the Interior. Four of the parcels would be added to the Death Valley National Monument, and one parcel would be added to the Joshua Tree National Monument. All five parcels are adjacent to the Monuments.

A description of each of the five parcels follow, together with a summary of the rationale for transfer provided by the Park Service in its May 19, 1988 proposal.

Parcel 1: North Death Valley

Description

Location and Size: This parcel lies immediately north of Death Valley National Monument (see map 2-1). It is bounded on the west by the crest of the Last Chance Range, on the north by a road, on the east by the California-Nevada state line, and on the south by the monument. It consists of 84,389 acres.

Existing Classification: The CDCA plan designated 72,709 acres as class C (suitable for wilderness), 9,920 acres as class L (limited use), and 1,720 acres as class M (moderate use).

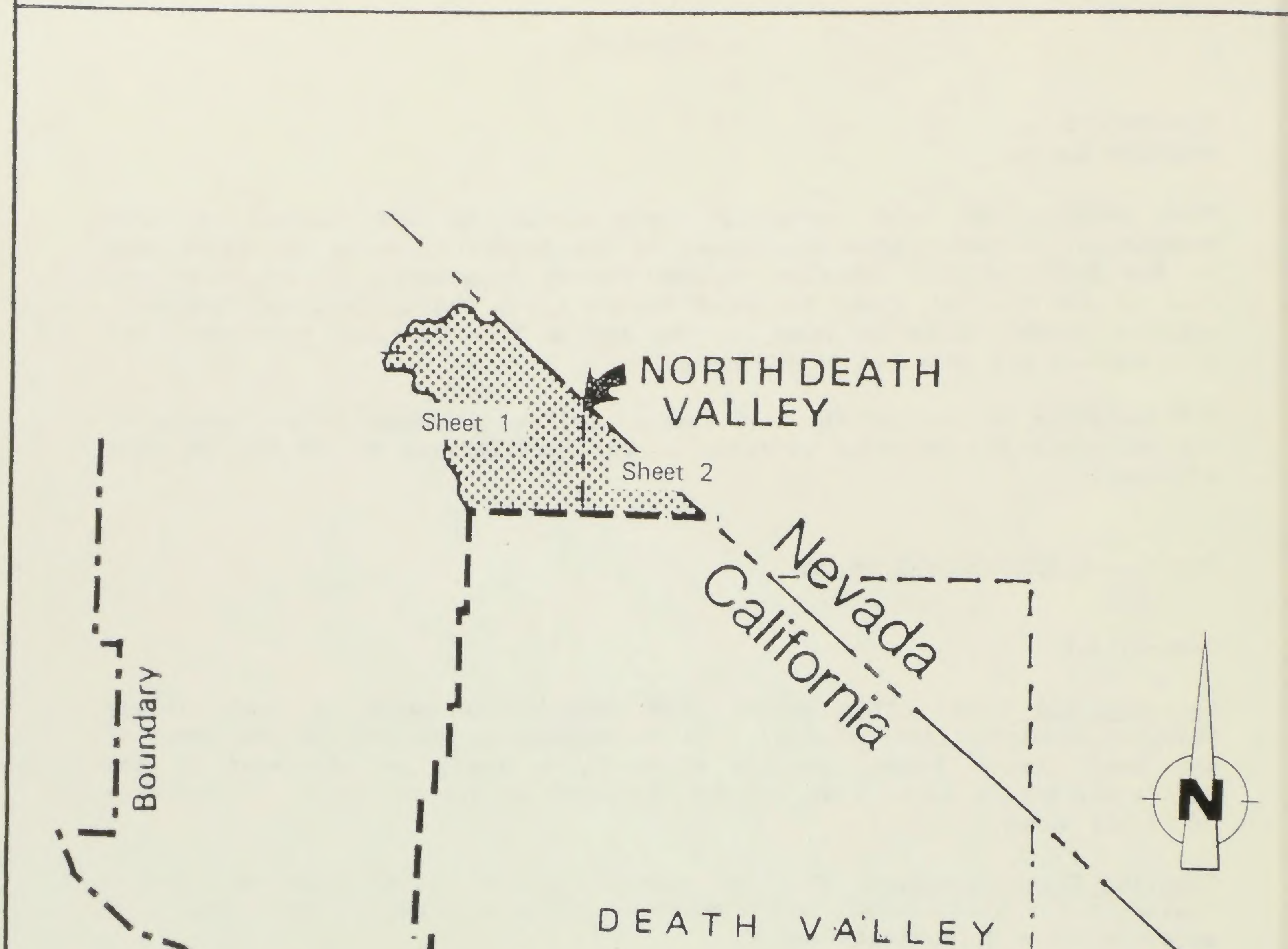
Park Service Rationale for Transfer

A summary of the National Park Service's rationale for transfer follows:

> The Park Service states that the area is a natural geologic, hydrologic and topographic extension of Death Valley. NPS believes that addition of this tract would contribute to perfecting Death Valley as an ecosystem.
>
> The Park Service feels that the addition of the area would support the monument's burro management program by facilitating the control of populations currently outside the monument; northern Death Valley is an important source of burro drift. Populations of burros are still common in and around the Sand Springs area.

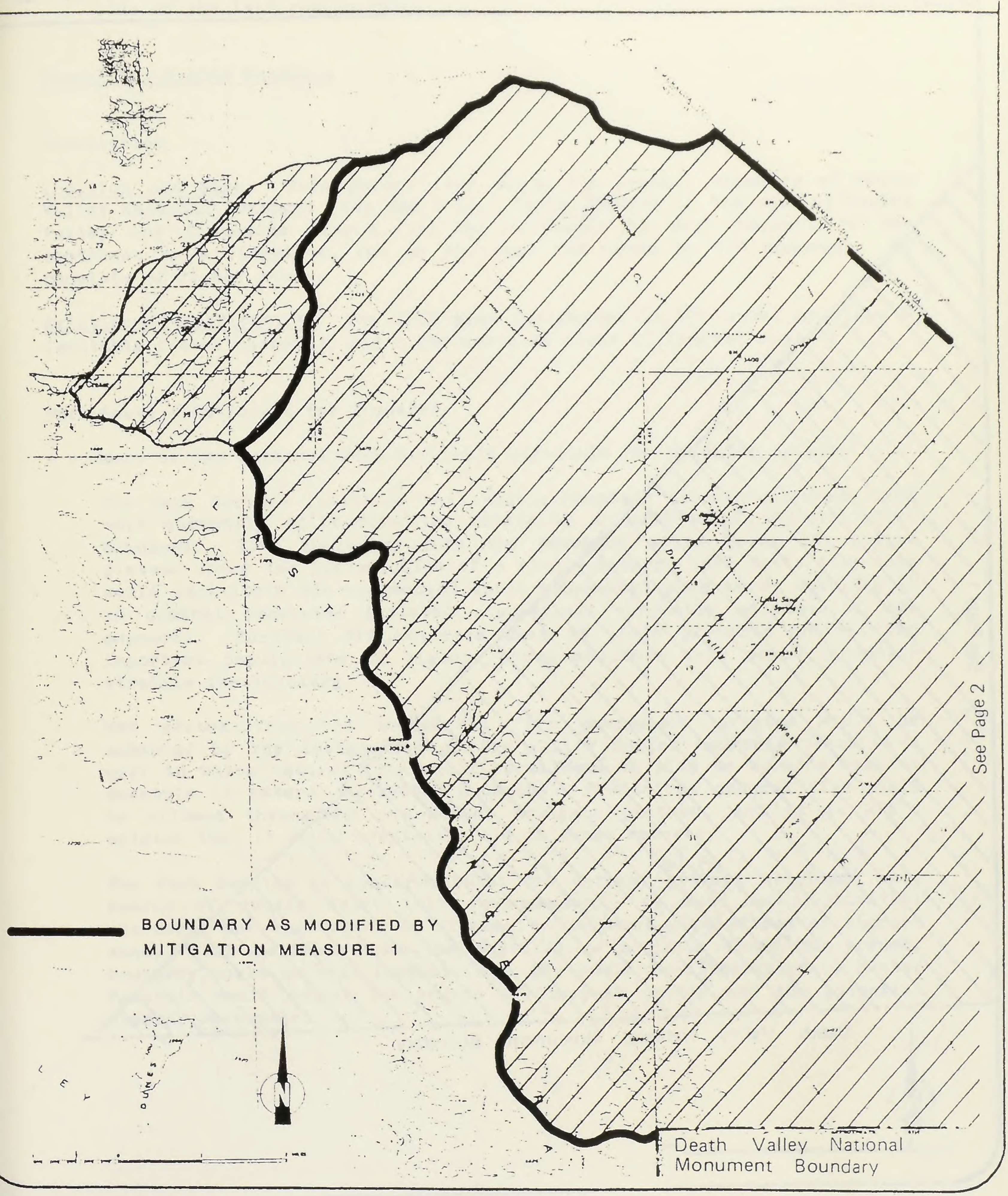
North Death Valley Index

MAP 2-1



North Death Valley

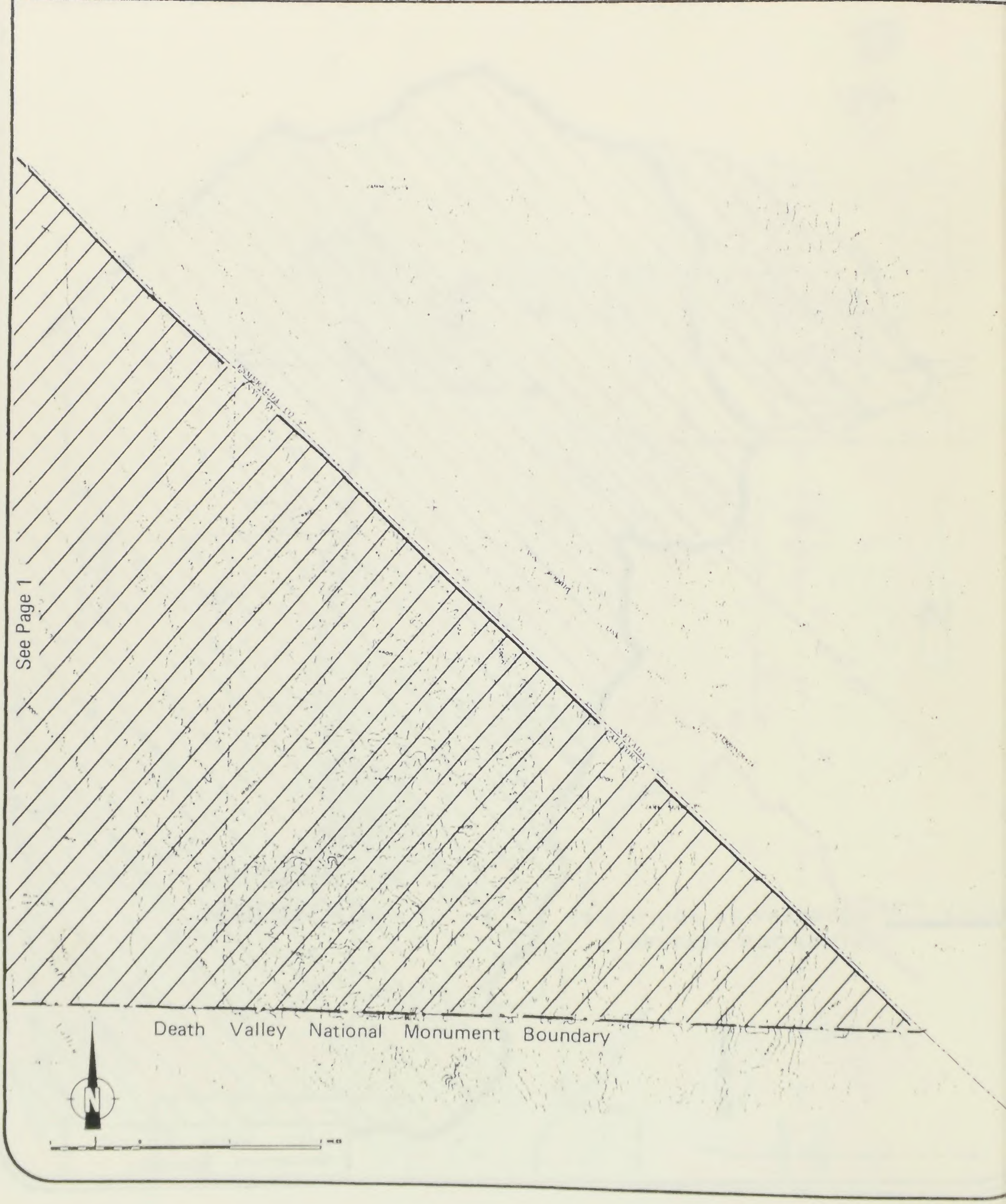
MAP 2-1


BOUNDARY AS MODIFIED BY MITIGATION MEASURE 1
Death Valley National Monument Boundary
See Page 2
N
Little Sand Spring

Sheet 1 of 2

North Death Valley

MAP 2-



Sheet 2 of 2

The Park Service believes that inclusion of the area would facilitate bighorn sheep population management by blocking up habitat on the east side of the last chance range.

Parcel 2: Hunter Mountain

Description

Location and Size: This parcel lies along the western boundary of Death Valley National Monument (see map 2-2). It is bounded on the west by Saline Valley and Grapevine Canyon, on the southwest by Mill Canyon, on the southeast by a ridgeline, and on the east and north by the monument. It consists of 26,687 acres.

Existing Classification: The CDCA plan designated 23,597 acres as class C (suitable for wilderness), and 3,090 acres as class L (limited use).

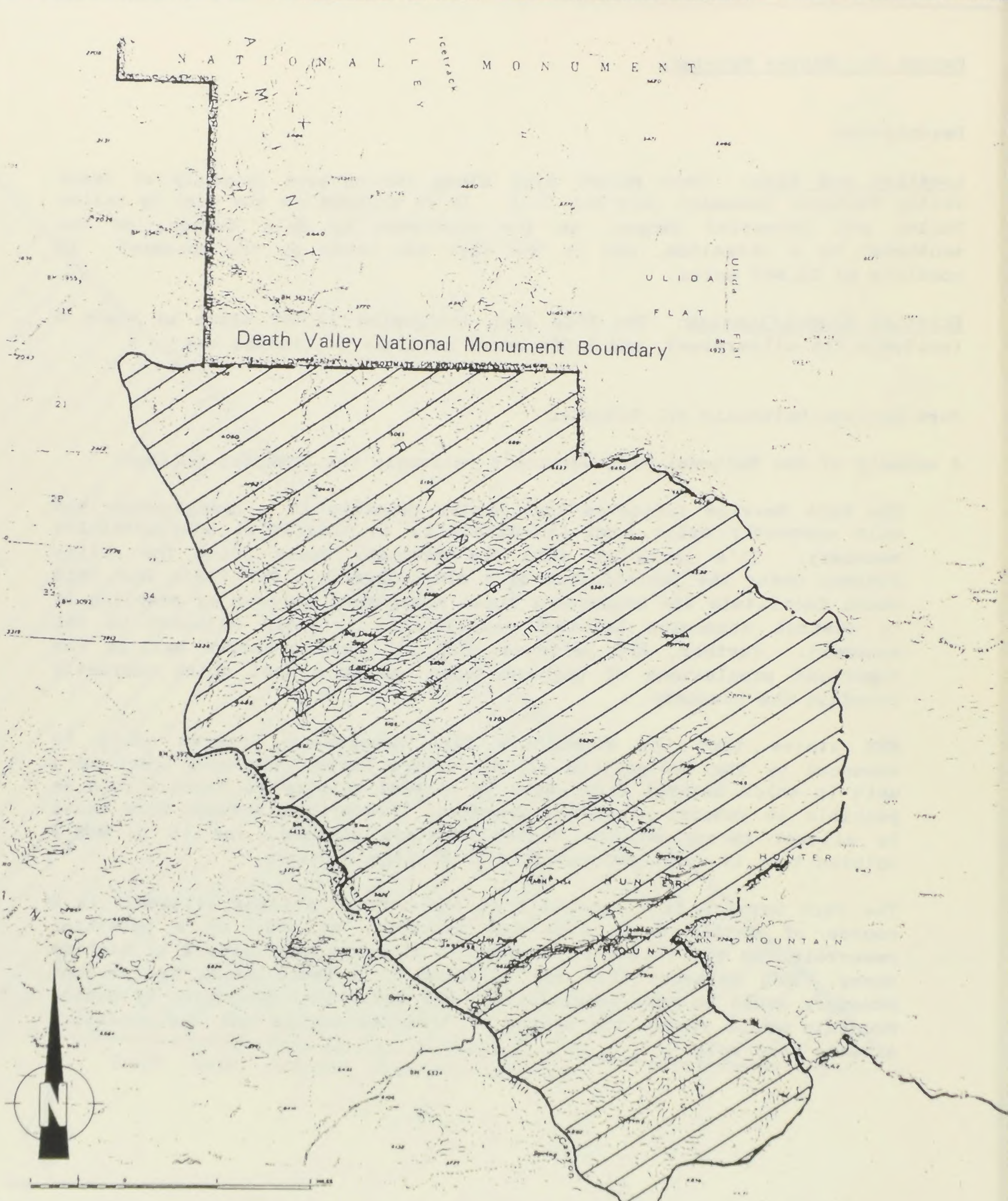
Park Service Rationale for Transfer

A summary of the National Park Service's rationale for transfer follows:

> The Park Service indicates that Hunter Mountain is a homogeneous land unit currently split down the middle by an artificial administrative boundary. It's inclusion into the monument would bring the entire plateau under the jurisdiction of a single agency. NPS feels that this would facilitate the monument's burro management program by enabling it to control otherwise isolated populations currently adjacent to the monument. Further, NPS believes that it would preserve habitat for important populations of bighorn sheep and mule deer which currently straddle the boundary.
>
> NPS states that the monument's fire management program would be enhanced by the designation of the entire Hunter Mountain tract as a unit in which natural fire would be allowed to play as broad a role as possible in natural ecosystem dynamics. Prescribed natural fire would be allowed throughout the Hunter Mountain plateau, and it is NPS's opinion that it would eventually aid in range recovery.
>
> The Park Service is concerned that the current grazing allotment is a source of cattle drift into the monument, as well as a potential reservoir for the vector of disease to monument populations of bighorn sheep. NPS believes that the building of a fence along the present boundary would be cost prohibitive. NPS feels that inclusion of Hunter Mountain would remove the source of trespass cattle and the potential disease reservoir.

HUNTER MOUNTAIN

MAP 2-2



Parcel 3: Pyramid Peak

Description

Location and Size: This parcel lies along the eastern boundary of Death Valley National Monument (see map 2-3). It is bounded on the north and west by the monument, on the south by state highway 190, and on the east by a drainage through and the east slope of the Funeral Mountains. It consists of 14,268 acres.

Existing Classification: The CDCA plan designated 11,956 acres as class C (suitable for wilderness), and 2,312 acres as class L (limited use).

Park Service Rationale for Transfer

A summary of the National Park Service's rationale for transfer follows:

> The Park Service states that access to other parts of the monument could be managed better if this parcel were transferred, and would produce a more recognizable patrol and management boundary. The new boundary follows a more natural break in the topography: the entirety of Red Ampitheater, Pyramid Peak, and the Funeral Mountains would be included within the monument. In addition, NPS believes that more cohesive management would be provided for a population of bighorn sheep which currently straddles the BLM-monument boundary.

Parcel 4: Greenwater Valley

Description

Location and Size: This parcel lies along the eastern boundary of Death Valley National Monument, south of parcel 3 (see map 2-4). It is bounded on the west and south by the monument, on the southeast by state highway 127, and on the northeast by the Furnace Creek Wash Road. It consists of about 117,505 acres.

Existing Classification: The CDCA plan designated 23,440 acres as class C (suitable for wilderness), 39,691 acres as class L (limited use), 34,728 acres as class M (moderate use), and 19,646 acres as class I (intensive use).

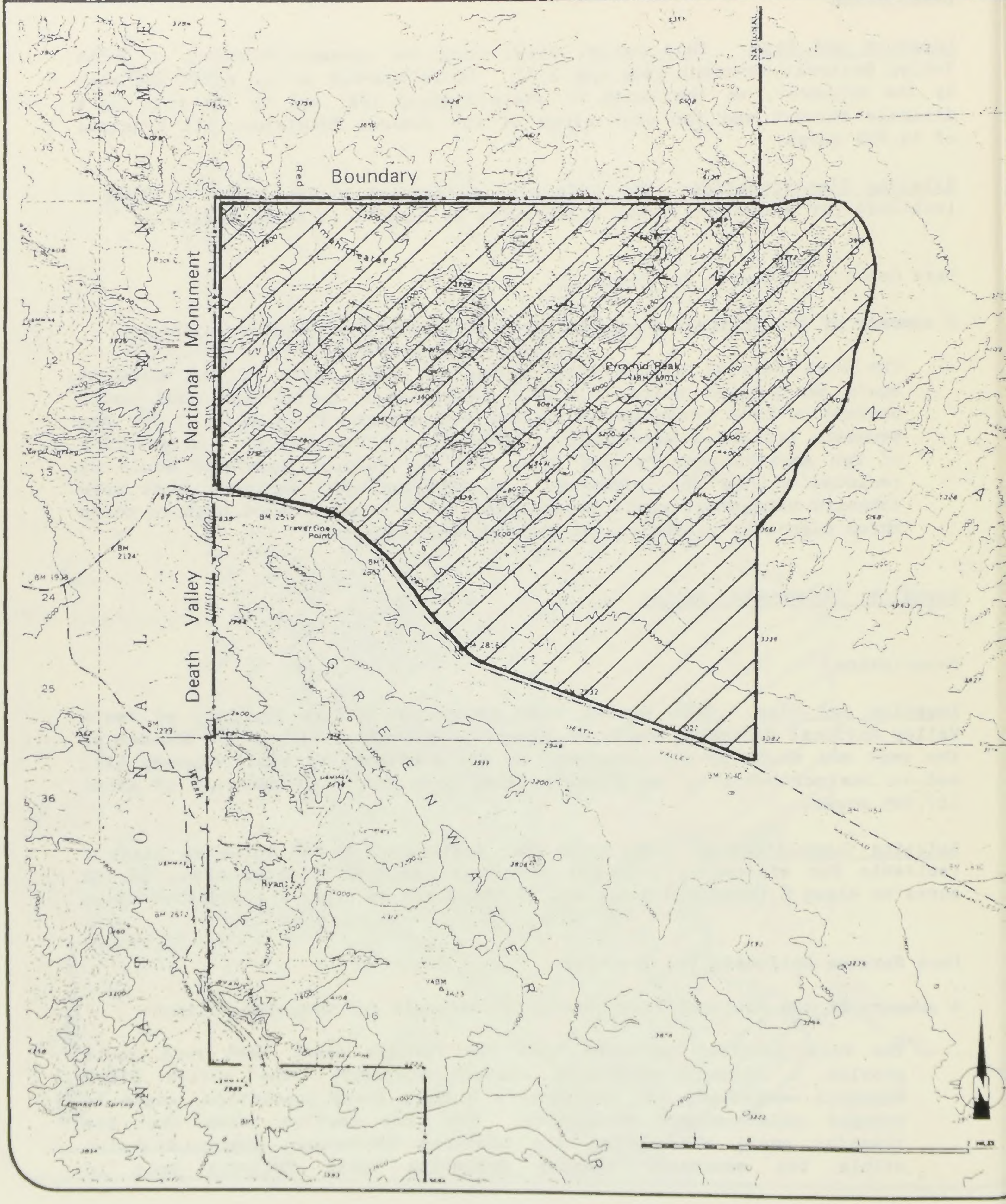
Park Service Rationale for Transfer

A summary of the National Park Service's rationale for transfer follows:

> The Park Service indicates that the Furnace Creek Wash road would provide a clearly definable eastern boundary. The entire Black Mountain watershed, and the range's bighorn sheep population, would be brought under single management. The Park Service notes that the transfer would also bring the historic Greenwater Mining District within the monument, thereby enhancing Death Valley's role in

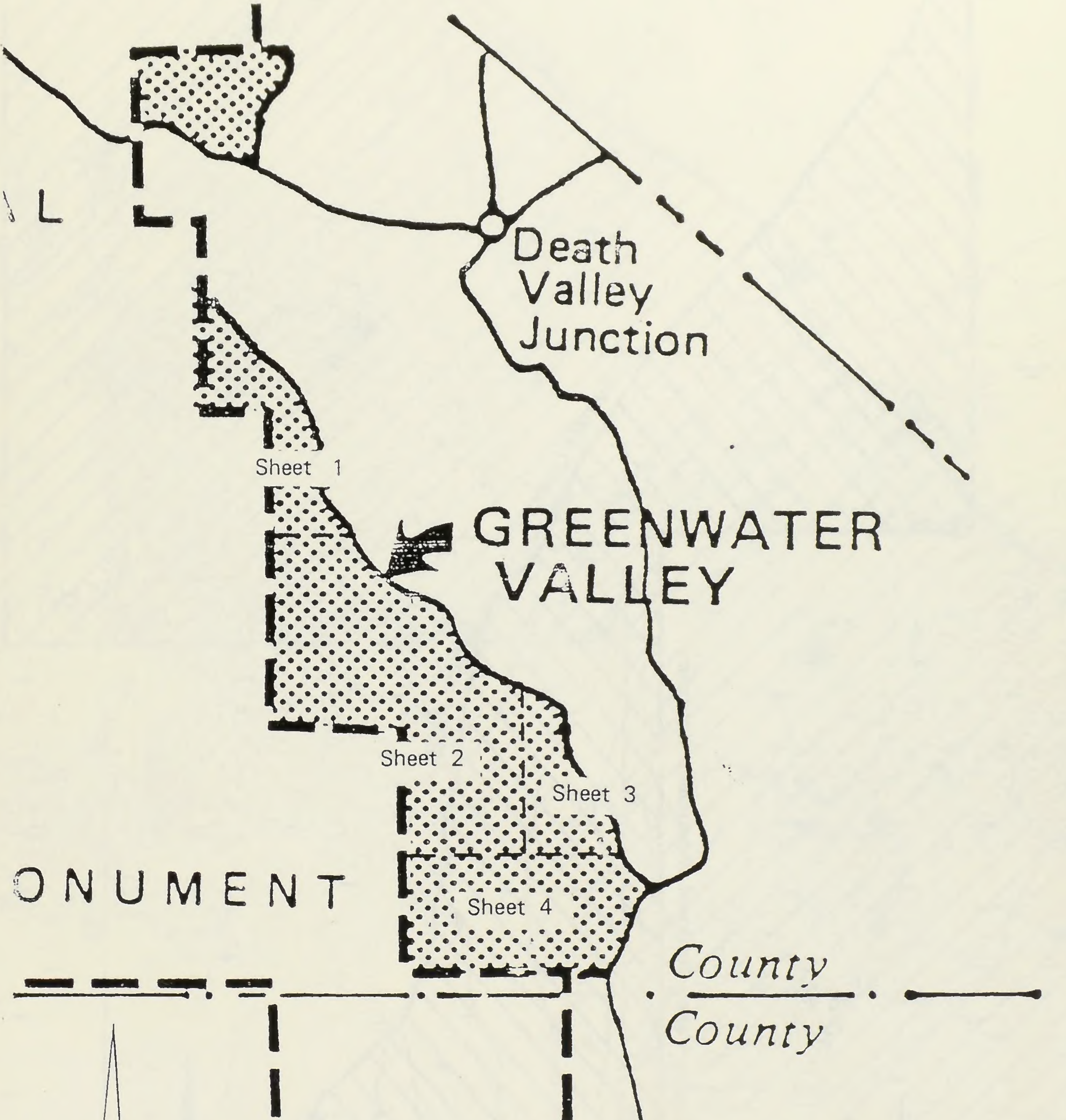
PYRAMID PEAK

MAP 2-3



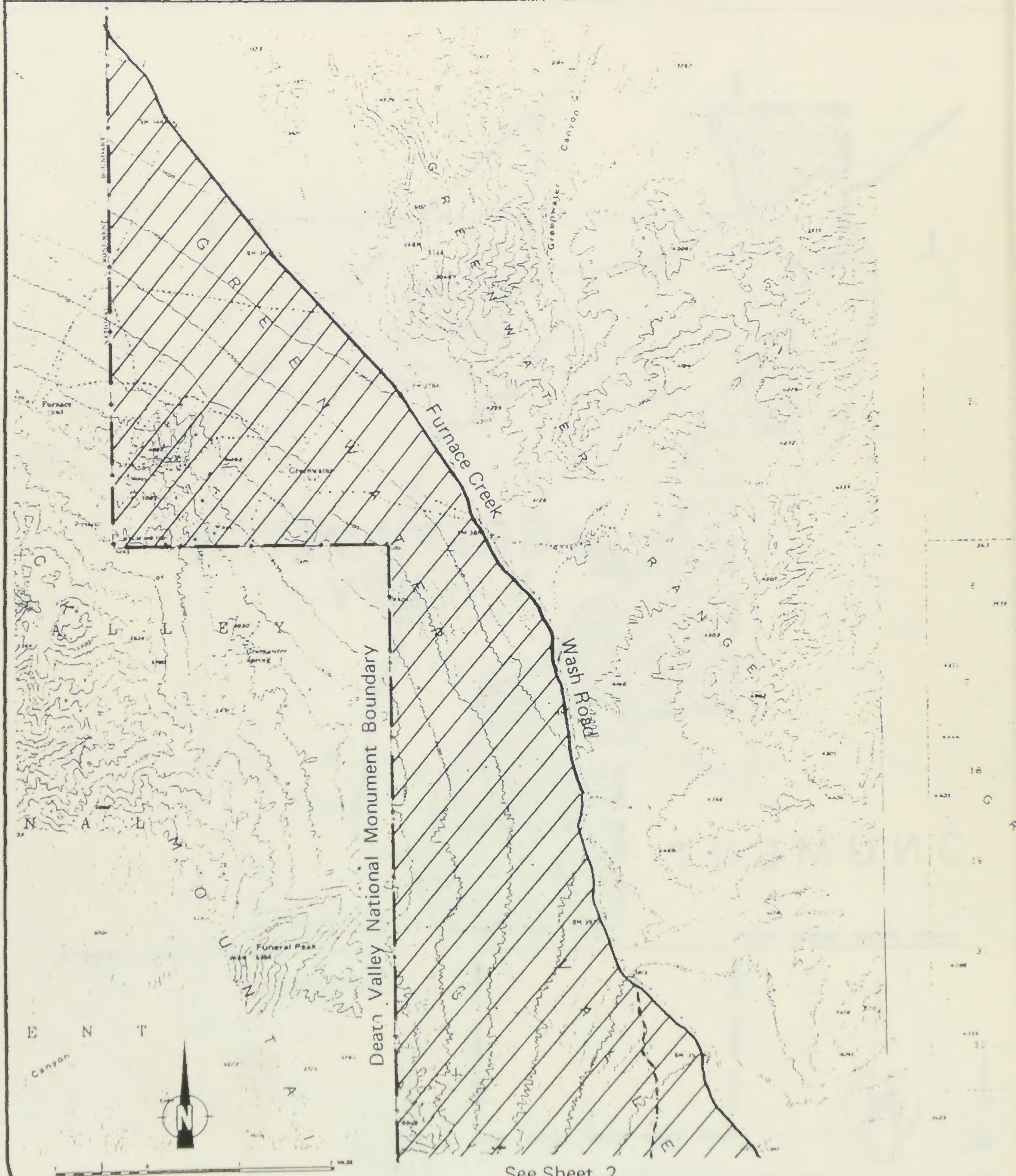
Greenwater Valley Index

MAP 2-4



Greenwater Valley

MAP 2-4

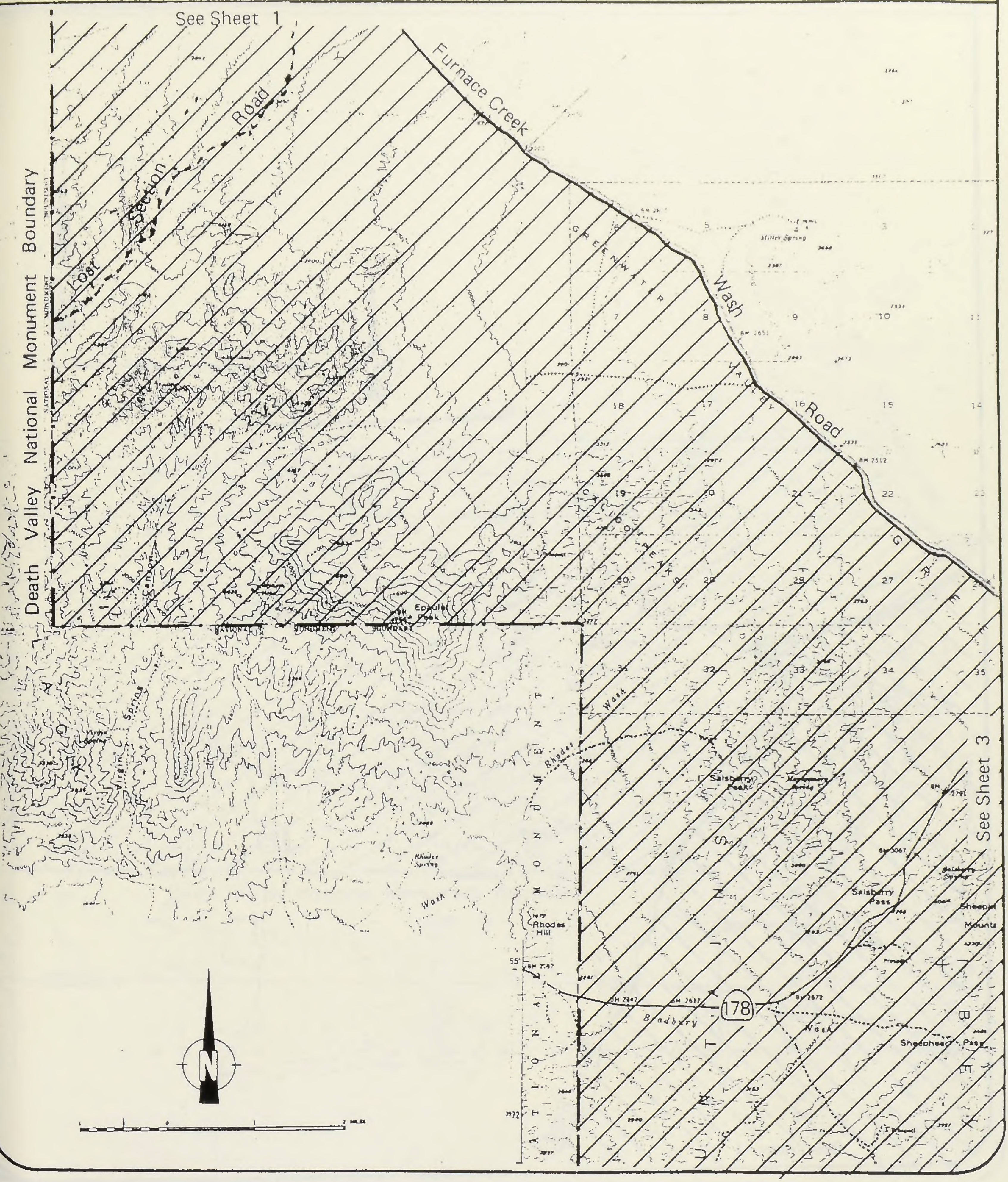


See Sheet 2

Sheet 1 of 4

Greenwater Valley

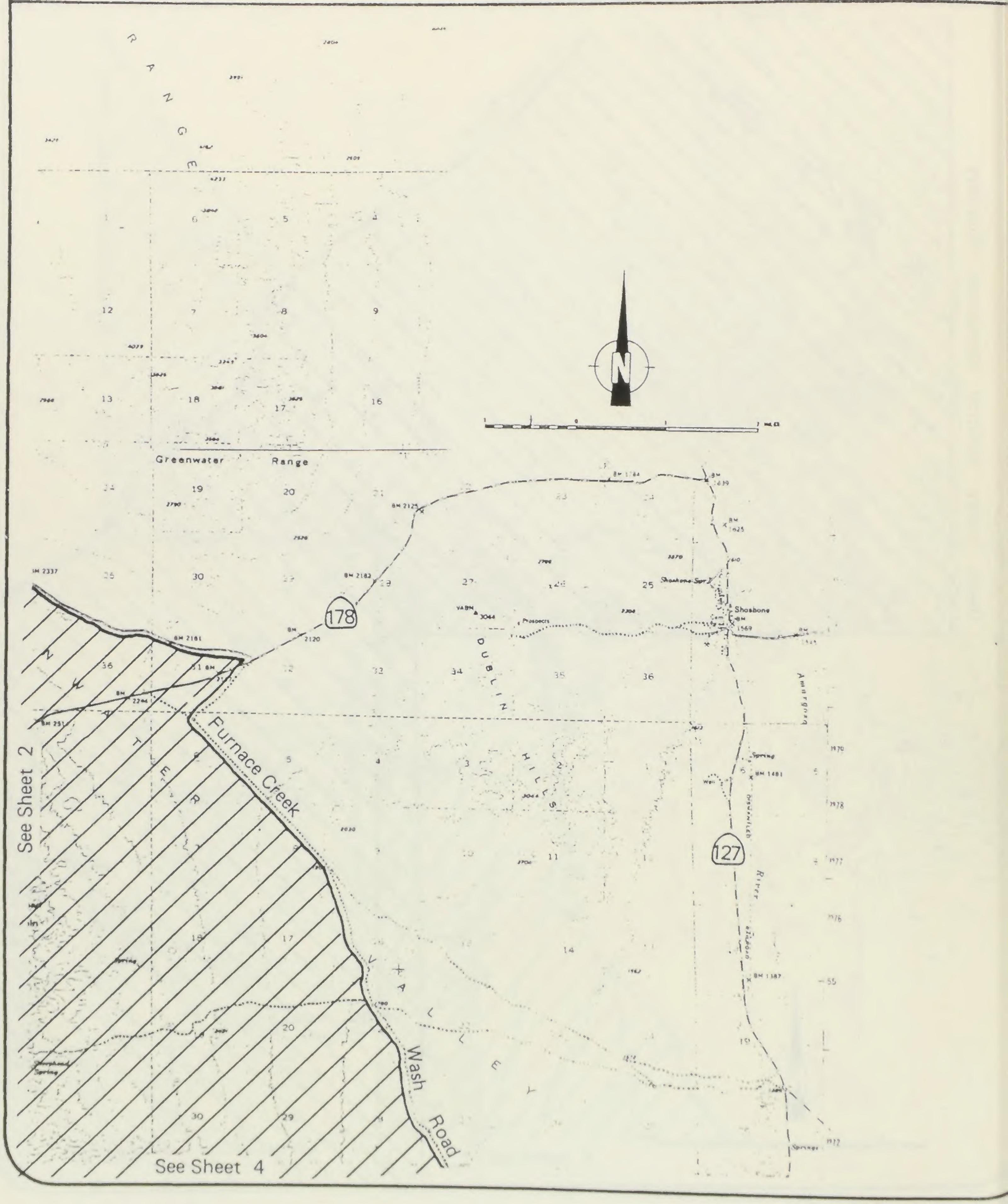
MAP 2-4



Sheet 2 of 4

Greenwater Valley

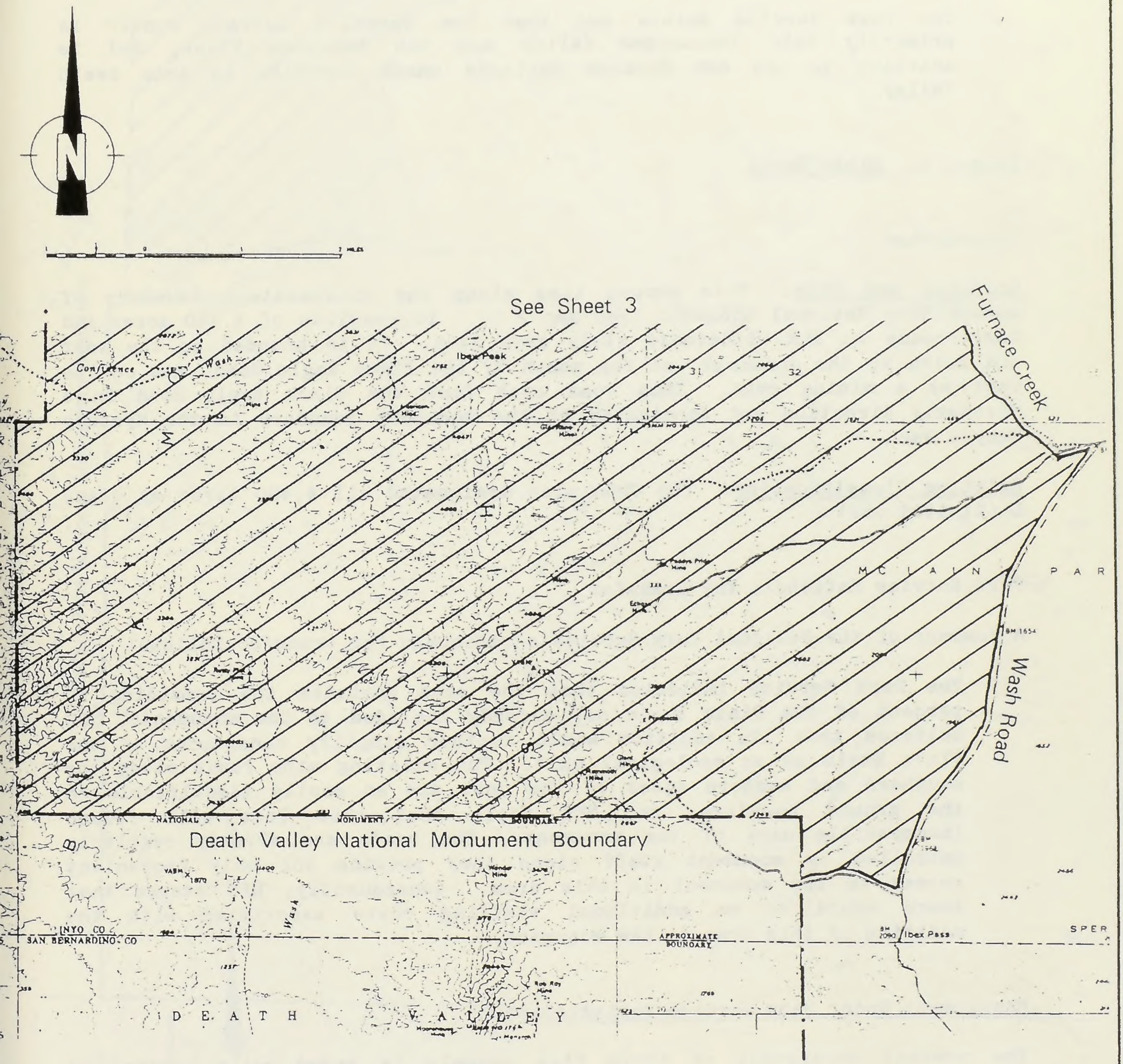
MAP 2-4



Sheet 3 of 4

Greenwater Valley

MAP 2-4



Sheet 4 of 4

representing over a century of mining history of the Northern Mojave Desert.

The Park Service believes that the transfer would afford better protection for Death Valley's water resources. The subsurface flow from this area is vectored directly into Death Valley, and therefore NPS feels that management of this area directly affects water sources within the monument.

The Park Service points out that the parcel's surface runoff is primarily into Greenwater Valley and the Amargosa River, and is additive to the Ash Meadows wetlands whose overflow is into Death Valley.

Parcel 5: Pinto Basin

Description

Location and Size: This parcel lies along the southeastern boundary of Joshua Tree National Monument (see map 2-5). It consists of 4,480 acres and corresponds to BLM wilderness study area 334A. It is bounded on the west and north by the monument, on the south by the Black Eagle Road, and on the east by a mining road. That road runs from the Black Eagle Road in a northerly direction and terminates at the monument boundary in the Mystery Canyon Wash.

Existing Classification: The CDCA plan designated all 4,480 acres as class L (limited use).

Park Service Rationale for Transfer

A summary of the National Park Service's rationale for transfer follows:

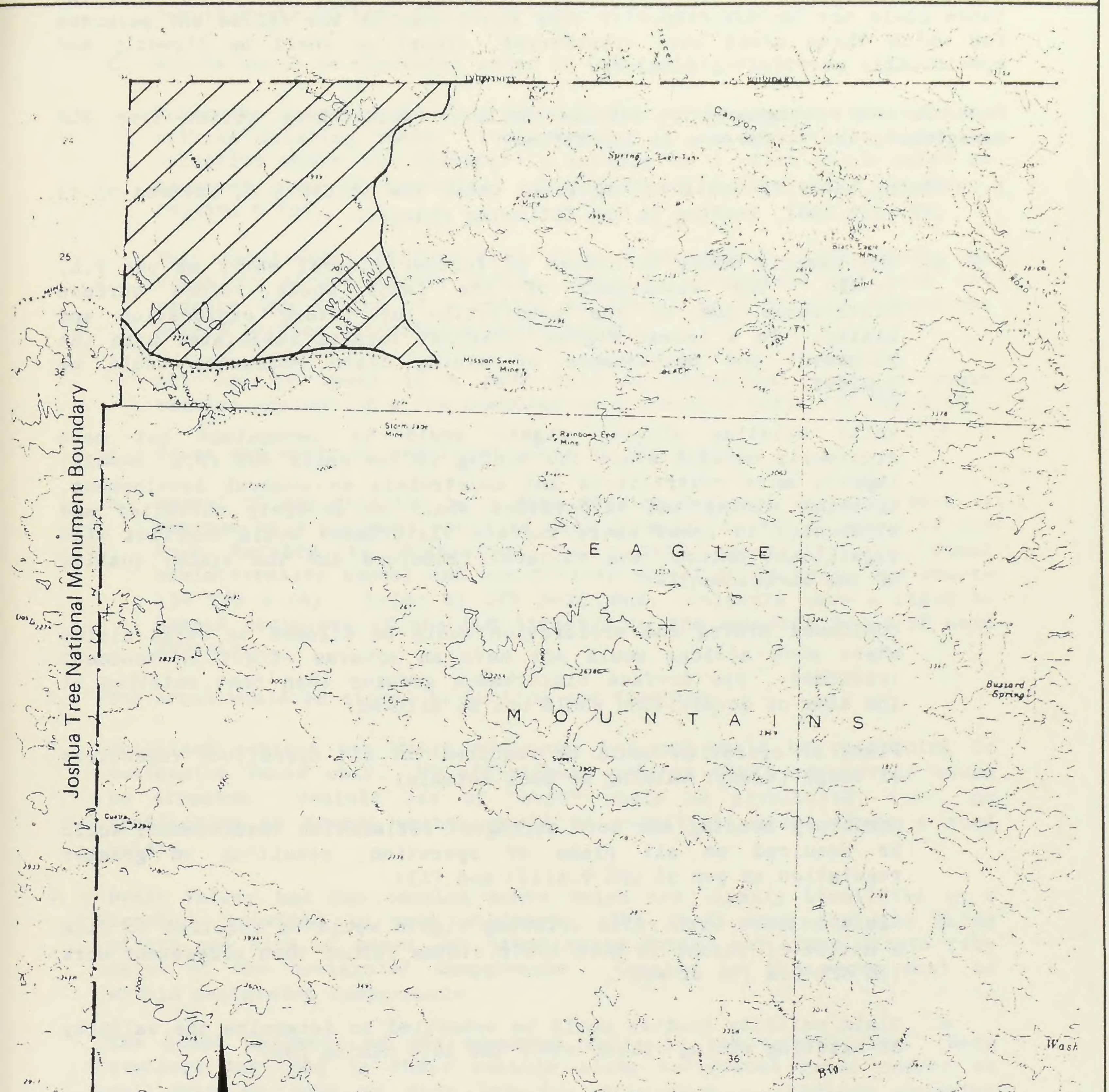
The Park Service indicates that the area contains the remaining 10 percent of the Pinto Basin not already included in the monument. NPS believes that its addition would further simplify management of the Pinto Basin as an ecological unit. The existing mine roads along the southern and eastern sides of the unit are an easily identifiable on the ground boundary, and NPS feels that this fact will reduce incompatible uses of the monument. The roads are already regularly patrolled by monument staff since they provide the only convenient access to the monument in this area. Consequently, NPS states that there would be no additional staffing costs associated with the addition of this area to the monument.

Management Under Park Service Jurisdiction

The present management of these five parcels is based on a concept of balanced multiple use. This would change under Park Service administration. All activities would be conducted in a manner consistent with the purposes for which the National Park System and each unit thereof was

PINTO BASIN

MAP 2-5



created, as per the National Park Service Organic Act of 1916 and the Redwoods Act of 1978.

Should the parcels be transferred to the National Park Service, uses of the lands could not be authorized if they would degrade the values and purposes for which these areas were transferred, except as shall be directly and specifically provided by Congress.

Park Service management guidelines follow. Where they differ from BLM management, the difference is identified:

1. Mining activity would be regulated under the 36 CFR 9.A, instead of 43 CFR 3809/3802, leading to the following changes:

    a. The parcels would be closed to further mineral entry as per P.L. 94-429. The withdrawal of the lands would reduce surface disturbance due to the prohibition of future exploration and mining. To a lesser degree, residual impacts associated with the placement and maintenance of mining claim monuments would be avoided.

    b. Valid existing mineral rights would be recognized but more rigorously managed since the mining in the Parks Act (P.L. 94-429) imposes more restrictions and constraints on mineral development. Existing mining and exploration would be severely curtailed and eliminated in areas where surface disturbance would conflict with significant natural and cultural resources and the visual quality of the environment.

        Continued mining and exploration would be allowed on valid claims where such actions would not have an adverse effect on monument resources. New surface disturbance greater than that existing at the time of acquisition would not be allowed.

    c. Plans of operation would be required for all operations regardless of scope (except walking or pack animals).

        Mandatory bonding and more stringent reclamation requirements would be required on all plans of operation, resulting in greater regulation as per 36 CFR 9.A(11) and (13).

    d. Claim holders with valid existing rights would be required to file a notice of intent to hold their claims rather than assessment work (36 CFR 9.A (5) et seq).

    e. Claim validity studies would be scheduled to determine the validity of existing mining claims under the 1872 Mining Law.

        A validity examination is defined as a field examination of an unpatented mining claim by a minerals examiner to verify or repute the discovery alleged by the mineral claimant.

        The most durable and famous test of discovery was first laid down in Castle v. Womble, 19 LD 455(1894) in which the Secretary of the Interior stated:

"...where minerals have been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success, in developing a valuable mine, the requirements of the (discovery) statutes have been met."

f. Access would be regulated under 36 CFR 9.3(A), et. seq.

Under the proposed action a special use permit would be required to utilize existing roads. The creation of new access would not be curtailed where the operator is working on a valid claim under an approved plan of operation. The proposed action would, however, require a fee.

This requirement differs from present management, under which the right of access across public lands is guaranteed and does not require the filing of a notice of intent or a plan of operations unless surface disturbance would occur.

All use of roads in a park unit by commercial vehicles would require payment of a fee computed on a ton-mile basis (36 CFR 9.15).

g. Water use would be regulated under 36 CFR 9.8(A).

h. Appeal of any decision by a Park Service Regional Director that is adverse to a claimant would be made directly to the Director of the Park Service in Washington D.C. This appeal is the final administrative appeal and any further appeal would be to the courts (36 CFR 9.14). Under 43 CFR 3802/3809, claimants have a right to appeal decisions of the BLM directly to the Interior Board of Land Appeals.

2. The areas would be closed to hunting and trapping.

3. Motorized vehicle use would continue, but use would be restricted to designated roads only. No off-highway vehicle (OHV) open areas would be affected. Vehicle use of "ways" would be prohibited, i.e., no trafficking up desert washes would be permitted except where a road exists.

4. Death Valley has two camping zones which are clearly identified in a brochure provided to park visitors. The first zone includes areas within one mile of paved and other major roads, and areas within five miles of the desiganted campgrounds. Camping in this zone must be within designated campgrounds.

   The great majority of the monument falls in the second zone. Here visitors may camp in their vehicle along designated roads and/or at pull-outs as long as they are $^1/_4$ mile from a wildlife watering site. Visitors may also camp anywhere they wish to walk in the backcountry except around waterholes.

   Camping is limited to 30 days except in Furnace Creek and Mesquite Campground which are limited to 14 days.

Within Joshua Tree, backcountry camping is allowed only in areas at least one mile from any designated access road.

5. Fire management would be directed toward restoring fire to its natural role in a dynamic ecosystem. This would be accomplished by allowing certain natural (lightning) starts to burn as prescribed natural fires, while providing for human safety and protection of resources.

6. Where grazing occurs (Hunter Mountain, Northern Death Valley), the current leases will be honored until the current permittee relinquishes the lease or dies. Grazing is not compatible with park purposes and values and would be phased out.

7. Wild Horse and Burro Act constraints do not apply on National Park System (NPS) land. Animals would be subject to removal or direct reduction.

8. Designated wilderness areas would be managed under NPS wilderness management guidelines. These guidelines are very similar to the BLM's guidelines, except that certain recreation activities would not be allowed. This would restrict hunting, trapping, rockhounding, and other activities that would be allowed in BLM wilderness areas.

9. Cultural resources and the management of same would not be affected.

10. Consumptive uses such as firewood collecting and rock collecting would not be allowed. Collecton for scientific purposes and all research would be by permit only.

11. Natural areas would be managed to maintain natural ecosystems and processes. Any existing wildlife guzzlers will be maintained since wildlife may have become dependent upon them. However, should these artificial watering sources be destroyed by natural catastrophic events, they would not be replaced. No new guzzlers would be constructed unless research shows that man's development activities have precluded the use of natural sources by wildlife, or unless conditions present at the time of construction are still in effect (i.e. guzzlers used at natural spring sites altered by human activities).

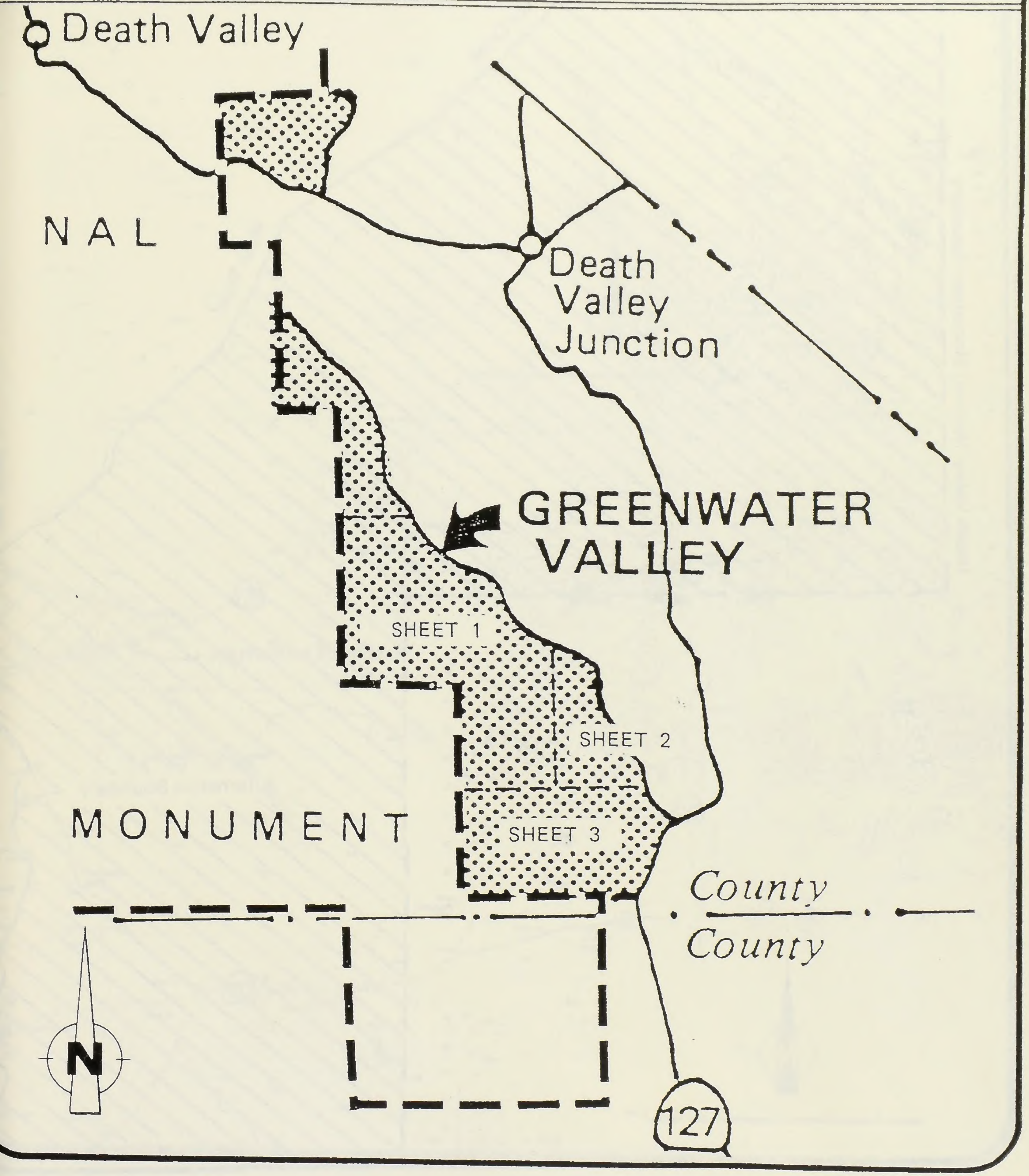
ALTERNATIVE B:
MODIFIED GREENWATER VALLEY PARCEL

That portion of the Greenwater Valley Parcel north and west of the crest of the Ibex Hills would be transferred to Death Valley National Monument, a total of 87,174 acres. The area to be transferred would include 23,440 acres presently designated as class C (recommended wilderness) by the CDCA Plan, 39,691 acres of class L (limited use), 18,091 acres of class M (moderate use), and 5,952 acres of class I (intensive use).

In the southeastern portion of the Park Service's original proposal, a total of 30,331 acres would not be transferred. This area would remain under BLM administration. It includes 16,637 acres designated as class M (moderate

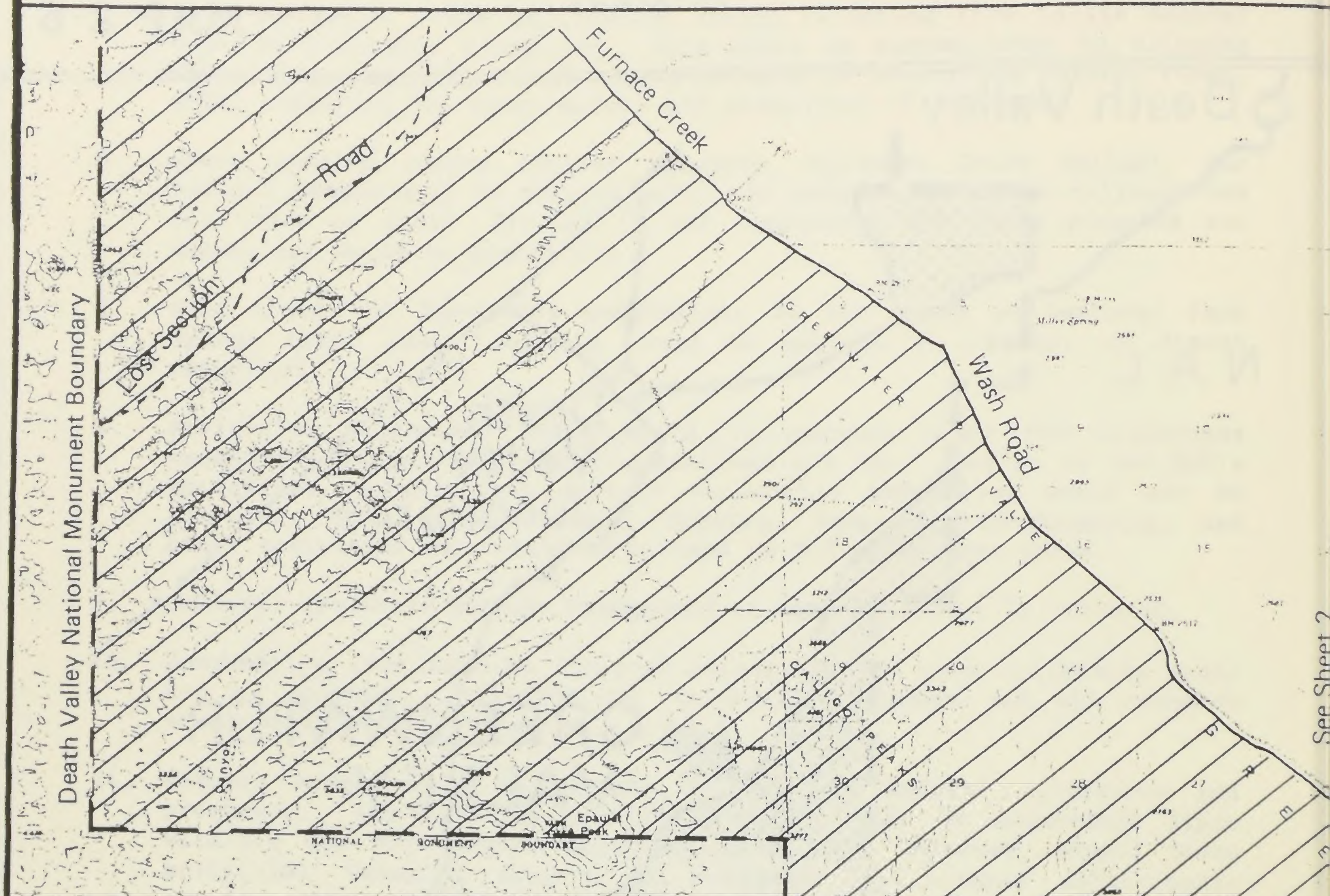
Greenwater Valley Alternative
INDEX

MAP 2-6



Greenwater Valley Alternative

MAP 2-6



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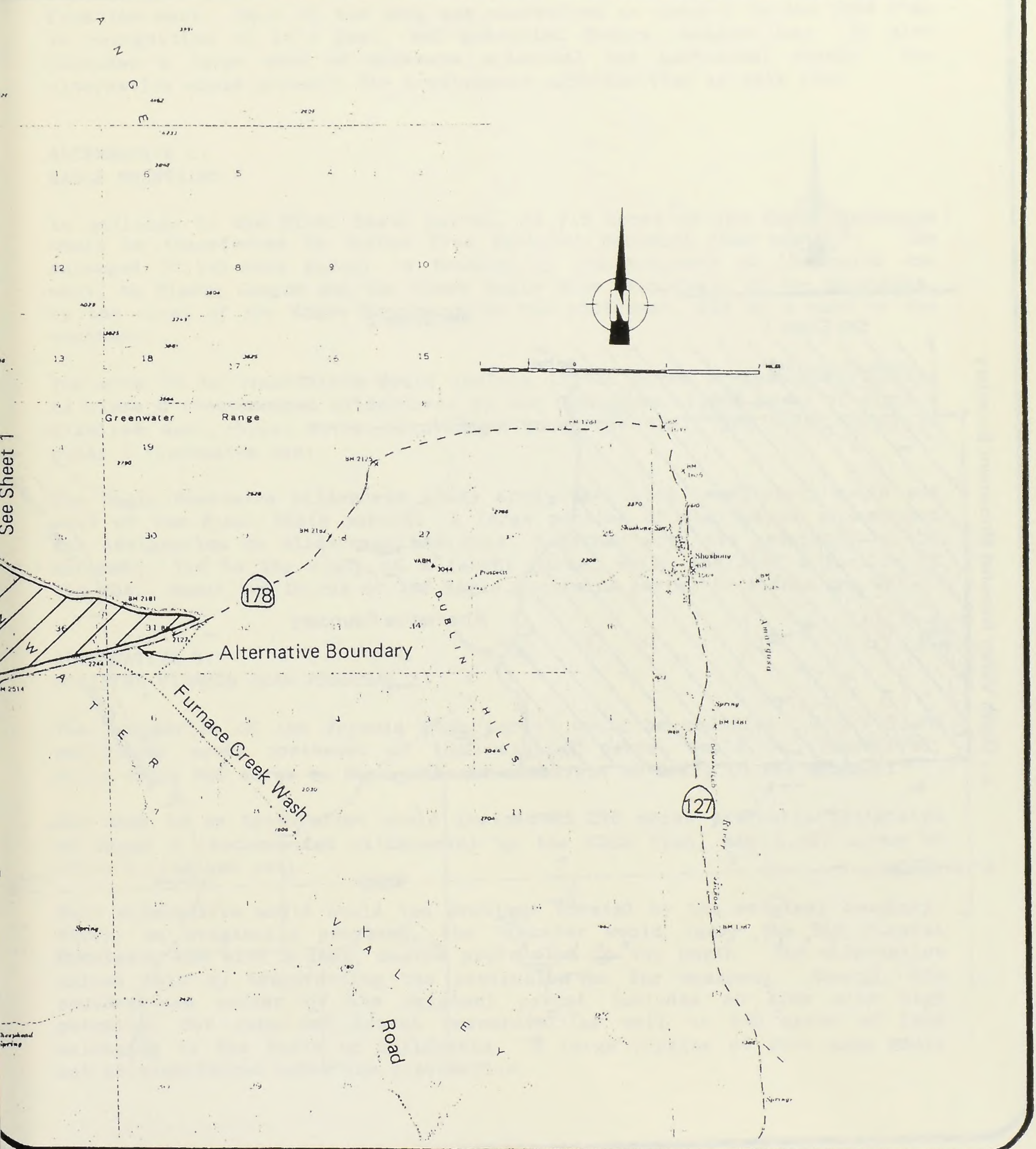
Greenwater Valley Alternative

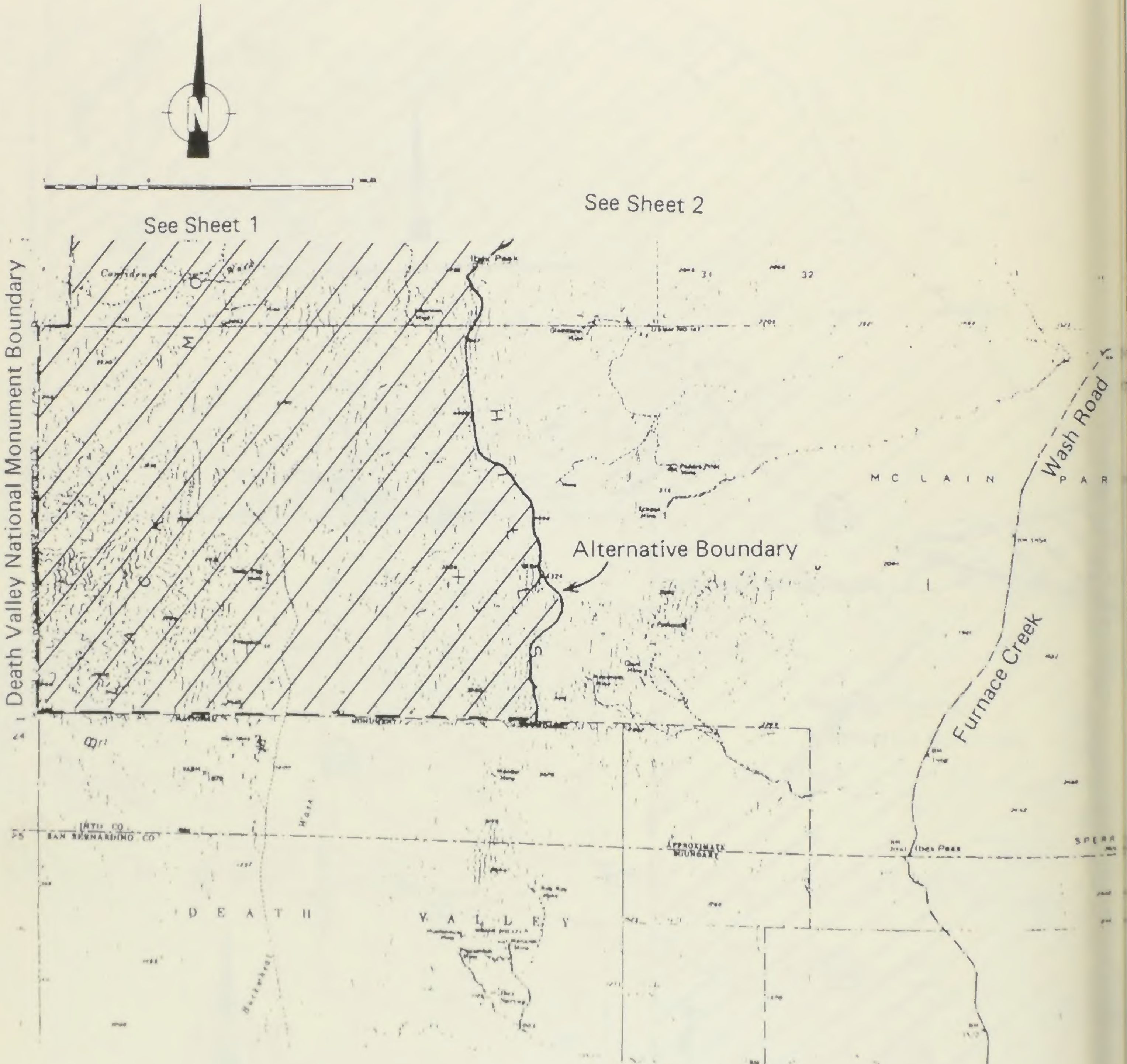
MAP 2-6



Sheet 2 of 3

Greenwater Valley Alternative

MAP 2-6



use) by the CDCA plan, and 13,694 acres designated as class I (intensive use).

The area west of the crest of the Ibex Hills historically has seen a considerable amount of mineral development. Numerous roads enter the area from the east. Much of the area was classified as class I by the CDCA Plan in recognition of it's past, and potential future, mineral use. It also includes a large area of moderate potential for geothermal energy. The alternative would preserve the development opportunities in this area.

ALTERNATIVE C:
EAGLE MOUNTAINS

In addition to the Pinto Basin parcel, 32,715 acres of the Eagle Mountains would be transferred to Joshua Tree National Monument (see map 2-7). The enlarged 37,195-acre parcel is bounded by the monument on the north and west, by Placer Canyon and the Black Eagle Mine Jeep Trail on the northeast, by the crest of the Eagle Mountains on the southeast, and by a wash on the southwest.

The area to be transferred would include 19,906 acres presently designated as class C (recommended wilderness) by the CDCA Plan, 4,865 acres of class L (limited use), 3,241 acres of class M (moderate use), and 9,183 acres of class I (intensive use).

The Eagle Mountains wilderness study area (WSA) lies immediately south and west of the Pinto Basin parcel. A large portion of the WSA is recommended for designation as wilderness and this, together with its proximity to the monument, led to the study of a larger parcel which included a portion of the WSA. About two-thirds of the Eagle Mountains parcel is within the WSA.

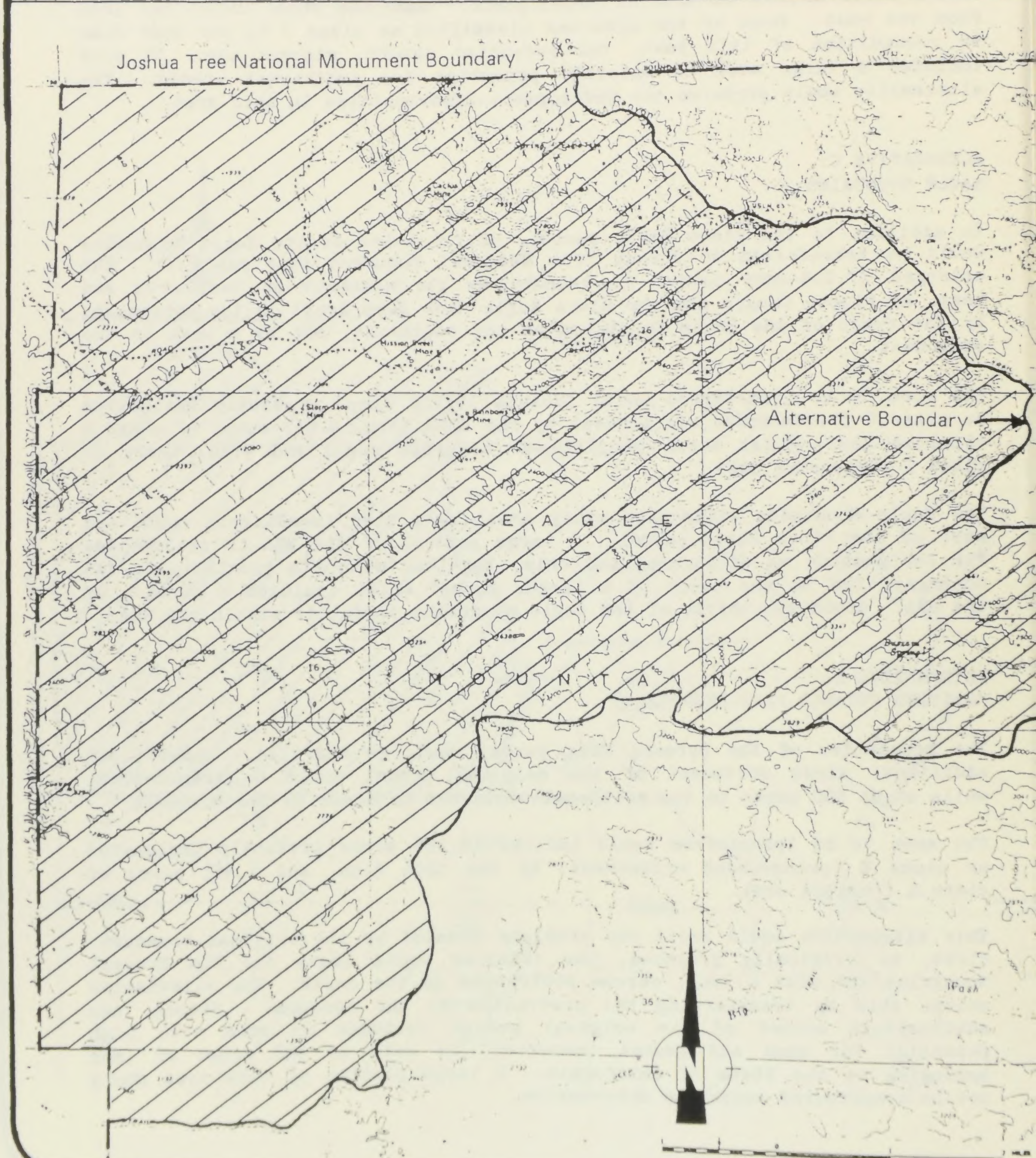
ALTERNATIVE D:
MODIFIED PYRAMID PEAK PROPOSAL

The boundaries of the Pyramid Peak parcel would be modified. About 3,400 additional acres northeast of the original parcel would be transferred, while about 900 acres to the southeast would not be added to the monument.

The area to be transferred would include 15,296 acres presently designated as class C (recommended wilderness) by the CDCA Plan, and 1,461 acres of class L (limited use).

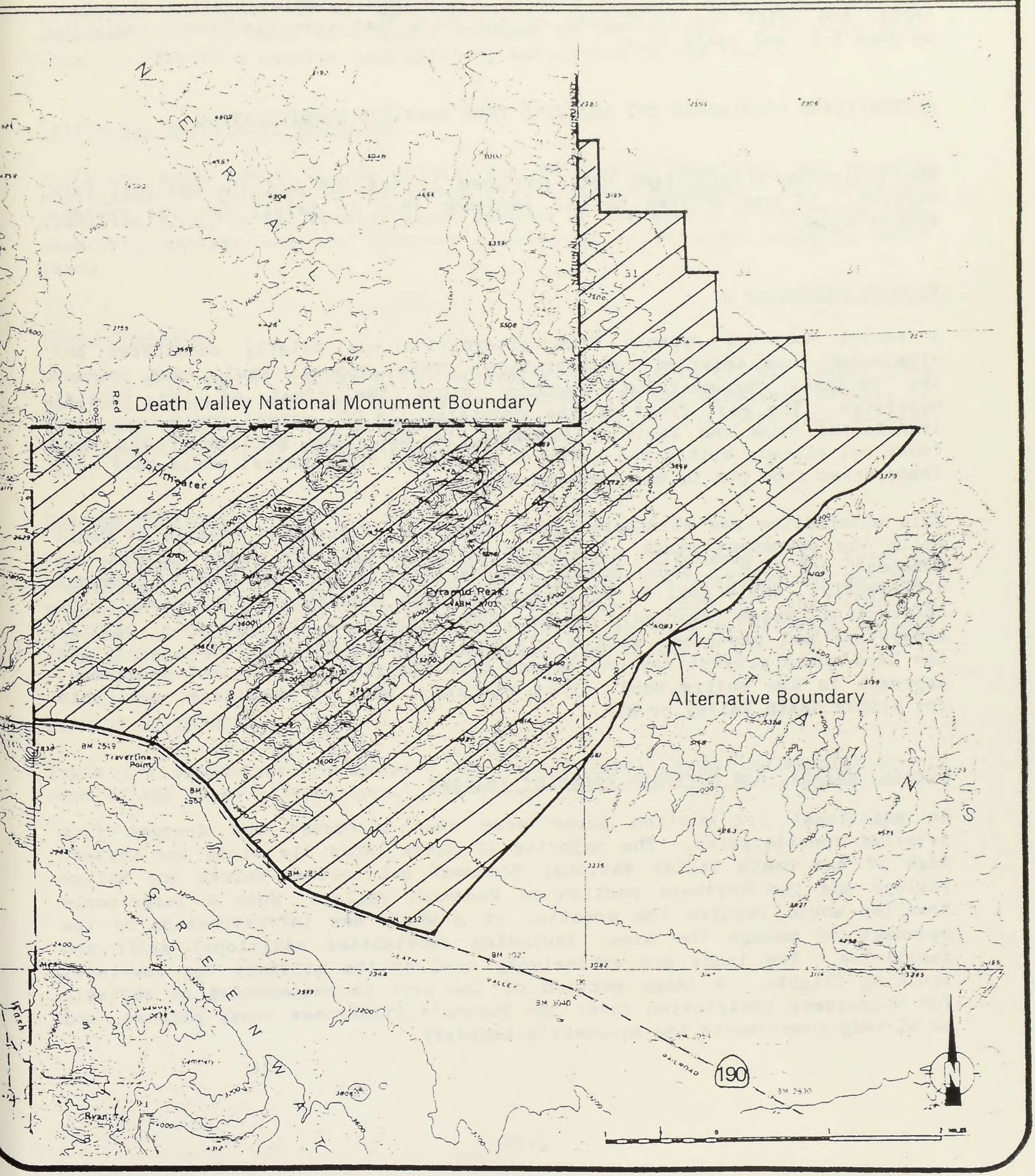
This alternative would avoid two problems created by the original boundary. First, as originally proposed, the transfer would leave the BLM Funeral Mountains WSA with a long, narrow protrusion to the north. The alternative solves this by transferring the protrusion to the monument. Second, the southeastern corner of the original parcel includes an area with high potential for sand and gravel resources, as well as 640 acres of land belonging to the State of California. A large portion of this area would not be transferred under the alternative.

Eagle Mountains Alternative MAP 2-7



Pyramid Peak Alternative

MAP 2-8



ALTERNATIVE E:
NO ACTION

The parcels would not be transferred to the National Park Service, but would remain under BLM administration. They would continue to be managed under the regulations and policies guiding the Bureau's administration of public lands, and under the provisions of the CDCA Plan (see discussion beginning on page 1-2, and table 1-1).

ALTERNATIVES CONSIDERED BUT REJECTED FROM DETAILED CONSIDERATION

The following alternatives were analyzed by the BLM and the National Park Service. It was decided not to consider them in detail for the reasons stated below.

Funeral Mountains

A second Modified Pyramid Peak alternative was briefly considered but eliminated from detailed consideration. This proposal would have redrawn the National Monument-BLM boundary along the crest of the Funeral Mountains. The east front of the mountains (15,000 acres) would have been transferred from the National Monument to BLM. The portion of the west front not already within the National Monument (7,000 acres) would have been transferred from BLM to the National Monument.

This alternative was eliminated from further consideration because it would split the permanent range of a herd of desert bighorn sheep between the Monument and BLM. Each agency approaches bighorn management somewhat differently: BLM's goal is to enhance bighorn popupations (for example, by contructing water sources), while NPS's goal is to maintain natural ecosystems and processes with a minimum of human manipulation. Splitting the herd would prevent any one agency from applying a consistent management approach to the entire herd. This situation was not considered desirable for either Death Valley or BLM.

Eureka, Saline, and Northern Panamint Valleys

An additional 1.1 million acres were also discussed but dropped from detailed consideration. The majority of these lands lie along the western edge of the Death Valley National Monument and include Eureka and Saline valleys and the northern portion of Panamint valley. Such a large-scale transfer would require the creation of a whole new infrastructure by the monument to manage the area, including substantial additional staff and facilities. The lands are extensively used by the military for low-level training flights. A large portion of the area is recommended as suitable for wilderness designation under the Bureau's wilderness study process, and so already complements the monument's boundary.

Owlshead Mountains

Another large tract that was also dropped from further consideration lies south of the Death Valley National Monument in the Owlshead Mountains. It consists of about 210,000 acres. It is recommended as suitable for wilderness designation by BLM, offers no further enhancement to the monument, and is more effectively managed by the Bureau. The lands also offer an effective barrier from military activities to the south.

Little San Bernardino Mountains

A 76,000 acre tract in the Little San Bernardino Mountains was briefly considered for transfer to the Joshua Tree National Monument. This area was dismissed from further consideration because of the area's checkerboard land ownership pattern and the inherent problem of effectively managing these lands.

Pinto Mountains

A 7,500 acre parcel in the Pinto Mountains (just north of the Joshua Tree National Monument) was also briefly considered. It was dismissed because of the large number of mining claims in the area and the potential mineral development conflicts these claims portend.

Coxcomb Mountains

The Coxcomb Mountains were also discussed but dismissed from detailed consideration. This area lies to the east of the Joshua Tree National Monument and consists of about 82,500 acres. Much of the area is recommended suitable for wilderness. It could be more effectively managed from the east by the Bureau's Indio Resource Area Office.

SUMMARY OF IMPACTS

Table 2-1 summarizes the impacts that would result from implementation of each of the three alternatives.

Table 2-1
Summary of Impacts[1]

Resource	Alternative A by parcel[2]					Alternative			Alternative E by parcel				
	1	2	3	4	5	B	C	D	1	2	3	4	5
Wildlife	+	++	0	0	+	0	+	0	0	-	+	+	0
Botany	+	0	+	+	+	+	+	+	+	0	0	0	+
Grazing	-	-	0	0	0	0	0	0	0	+	0	0	0
Horse-Burro	0	-	0	0	0	0	0	0	0	0	0	0	0
Cultural Res	+	+	+	+	+	+	+	+	0	0	0	0	0
Lands	0	0	0	-	0	0	0	0	+	+	0	+	0
Airspace	0	0	0	0	0	0	0	0	0	0	0	0	0
Recreation													
Primitive	+	+	0	0	+	0	+	0	0	0	0	0	+
Vehicular	0	0	-	0	0	0	--	-	0	0	-	0	--
Hunting	-	0	0	0	0	0	-	0	0	0	0	0	-
Harvesting	0	+	0	0	0	0	0	0	0	+	0	0	0
Wilderness	0	0	0	+	+	+	0	+	0	0	-	-	0
GEM													
Energy	0	0	0	-	0	-	0	0	0	0	0	0	0
Minerals	-	--	--	--	0	-	--	--	0	0	0	0	0

[1]

++	Highly positive impact
+	Slightly positive impact
0	Neutral impact
-	Slightly negative impact
--	Strongly negative impact

[2]

1	North Death Valley
2	Hunter Mountain
3	Pyramid Peak
4	Greenwater Valley
5	Pinto Basin

CHAPTER 3

AFFECTED ENVIRONMENT

CHAPTER III

AFFECTED ENVIRONMENT

INTRODUCTION

The affected environment refers to the area which may be affected by the transfer of the five parcels to the National Park Service, and by the subsequent imposition of management considerably different from that prescribed by BLM. In most cases, the area affected is limited to the boundaries of the transfer parcels.

PARCEL ONE: NORTH DEATH VALLEY

Wildlife

Wildlife habitat consists of northern Mojave Desert scrub and woodland in the extreme northern portion of Death Valley and two adjacent, rugged mountainous areas, the Last Chance Range and Greenwater Range. Desert scrub habitat is characterized by vegetation that includes creosotebush (*Larrea tridentata*), bursage (*Ambrosia dumosa*), joint-fir (*Ephedra sp.*), buckwheat (*Eriogonum fasciculatum*), spiny hop-sage (*Grayia spinosa*), desert holly (*Atriplex hymenelytra*), and others. Woodland habitats include big sagebrush (*Artemisia tridentata*), Joshua tree (*Yucca brevifolia*), single-leaf pinyon pine (*Pinus monophylla*), and others.

Common vertebrates occurring in the parcel include the chuckwalla (*Sauromalus obesus*), side-blotched lizard (*Uta stansburiana*), zebra-tailed lizard (*Callisaurs draconoides*), sidewinder (*Crotalus cerastes*), red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), mourning dove (*Zenaida macroura*), horned lark (*Eremophila alpestris*), common raven (*Corvus corax*), loggerhead shrike (*lanius ludovicianus*), sage sparrow (*Amphispiza belli*), Merriam's kangaroo rat (*Dipodomys merriami*), deer mouse (*Peromyscus maniculatus*), desert woodrat (*Neotoma lepida*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), black-tailed jackrabbit (*Lepus californicus*), and the kit fox (*Vulpes macrotis*).

The Death Valley ecosystem is the entire geographic/hydrographic unit, extending from the existing monument boundary north to the natural boundary formed by the Last Chance and Greenwater Ranges. Ecosystems generally are defined according to natural features as opposed to political or artificial boundaries.

Unique Habitats

Sand Spring and Little Sand Spring provide the only permanent, natural water in the parcel. Both springs occur in the valley, and each supports limited but important aquatic and riparian habitats that are essential to the occurrence of many species of animals and plants. Screwbean mesquite (*Prosopis pubescens*) is associated with both springs. Actually, each of these two springs is comprised of a series of individual seeps along a fault and adjacent uplifted bluff or hill. Riparian vegetation includes cattail (Typha latifolia), common reed (Phragmites communis), saltgrass (Distichlis spicata), rush (Juncus sp.), stream orchis (Epipactis gigantea), yerba mansa (Anemopsis californica), and others.

Significant Species

Two sensitive animals, the golden eagle (Aquila chrysaetos) and desert bighorn (Ovis canadensis nelsoni) occur within the parcel.

Golden Eagle: A majority of the Last Chance Range is believed to be used as foraging territory for the golden eagle, in addition to another raptor, the prairie falcon (Falco mexicanus) (Bureau of Land Management 1980). It is highly likely, due to the nature of the terrain in this area, that several nesting sites or aeries for the golden eagle and prairie falcon occur in the parcel.

Desert Bighorn: Desert bighorn occur within a portion of the Last Chance Range in the parcel. However, they occupy most of the Last Chance Range and a majority of the population occurs outside the parcel and outside the boundary of Death Valley National Monument (Bureau of Land Management 1980, Weaver and Mensch 1970).

Desert bighorn are considered especially important and therefore greater detail of their status in the parcel is appropriate. In addition to their occurrence throughout the Last Chance Range, they occupy adjacent ranges, including Hunter Mountain, Cottonwood Mountains, and the Saline Range. Bighorn, primarily rams, are known to move throughout these mountain ranges through "corridors".

The desert bighorn population in the Last Chance Range is greater on the western slope (outside of the transfer parcel) due to more extensive habitat and the existence of two guzzlers (a device for collecting, storing and dispensing water). These two guzzlers have been in place for about 10 years and were installed by the California Department of Fish and Game and Bureau of Land Management. A third guzzler was constructed on the east slope of the range approximately three miles west of Sand Spring in the fall of 1987 by the Department of Fish and Game, the Society for the Conservation of Bighorn Sheep and the Bureau of Land Management. If successful in providing water, this habitat enhancement project may result in an increase in the bighorn population within the parcel. A bighorn concentration area was identified by Weaver (1970) on and adjacent to Last Chance Mountain located immediately north of the parcel. Bighorn are believed to move freely throughout the Last Chance Range (Weaver and Mensch 1970). McLean (1951) observed several bighorn approximately 200 yards northwest of Sand Spring during a field inspection of the area from June 23-30, 1951. There have been no reports of bighorn using Sand Spring for a water supply in recent years.

The bighorn population in the range has apparently increased since surveys were initiated, from 35 in 1957 and 85 in 1982 to 100 in 1988 (Weaver 1982, Bureau of Land Management 1988). This increase may be attributed to the installation of the two guzzlers in the mid 1970's. The management goal for bighorn population in the range is 150 animals (Bureau of Land Management 1988).

Area of Critical Environmental Concern (ACEC):

The Bureau of Land Management established an ACEC at Sand Spring and Little Sand Spring in 1983 (Map 3-1) (Bureau of Land Management 1983). Wildlife habitat associated with the aquatic and riparian habitats is the key component of the ACEC, and is particularly attractive to migratory and resident birds.

Botany

The springs and seeps at and near Big and Little Sand Springs in north Death Valley support an Unusual Plant Assemblage (UPA) and a rare plant population. UPAs associated with major springs and seeps are considered highly sensitive to disturbance according to Appendix X of the Proposed California Desert Conservation Area (CDCA) Plan, October 1980. In accordance with the CDCA Plan of 1980, highly sensitive UPAs will be treated in a manner which preserves the habitat and ensures the continued existence of the plant assemblage. As a UPA with a rare plant population, Big and Little Sand Springs is managed according to the BLM Sensitive Plant Policy and has been given additional protection with ACEC designation.

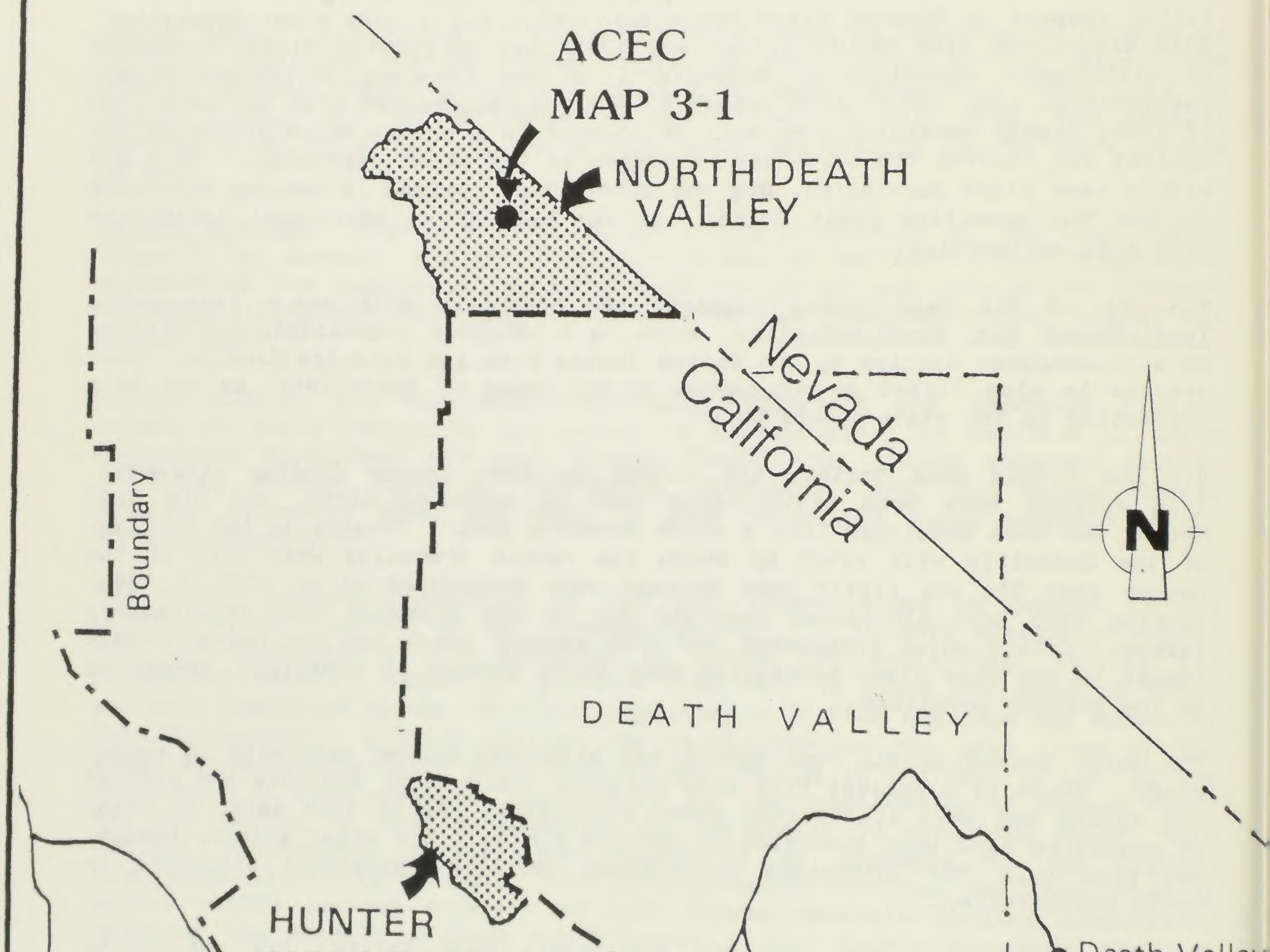
The UPA of Big Sand Spring supports the Sodaville milk vetch (*Astragalus lentiginosus var. sesquimetralis*), which is a category 1 candidate for listing as an endangered species by the United States Fish and Wildlife Service. This species is also listed as endangered by the State of California, as the only population in the state occurs here.

Big and Little Sand Springs are within the Last Chance grazing allotment. Both springs have been historically used as watering sites, and Big Sand Spring has been developed into a stock watering pond. Threats to the survival of the Sodaville milk vetch by burro and cattle trampling were part of the reason that Big and Little Sand Springs were designated as an ACEC in 1983. Grazing uses have diminished recently due to the distance from satisfactory forage. Cattle which frequented the area several years ago and caused severe damage to the rare plant population were there through an oversight, according to the grazing permittee.

The water source at Big Sand Spring has attracted mining interests in recent years. There is a current five acre millsite claim which includes the area of the spring and part of the rare plant population. As of this date, no plans of operation have been submitted to develop a mill. The water source, though, has been used for authorized exploratory drilling operations elsewhere in north Death Valley.

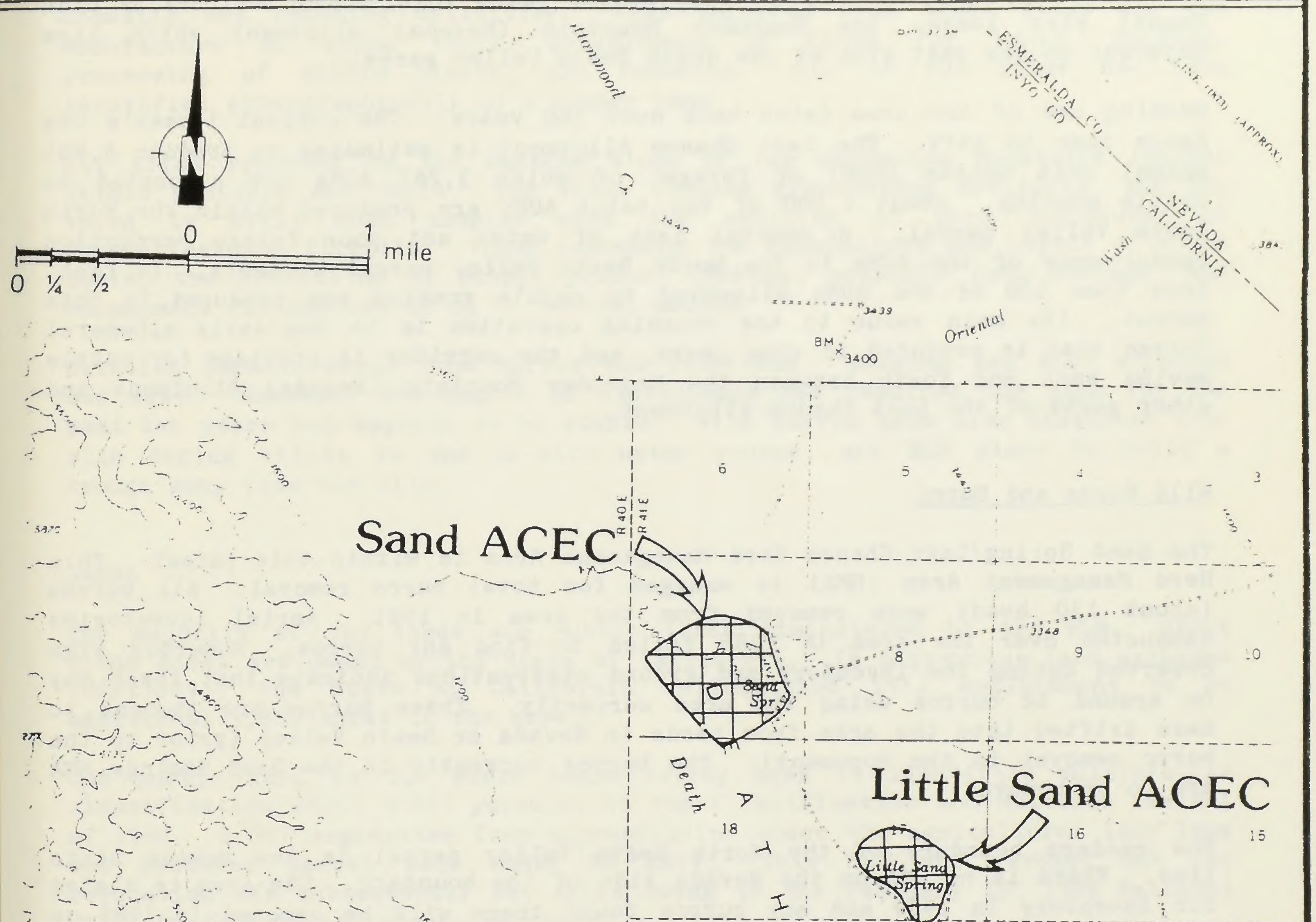
The ACEC management plan for Big and Little Sand Springs has yet to be completed, although most of the planned actions have been implemented. The rare plant population and the seep areas adjacent to Big Sand Spring have been secured by a four strand barbwire fence constructed in 1985. Big Sand Spring itself has been developed for wildlife, through dredging to remove emergent vegetation and to expand the pond area. Ranger patrols have been increased to maintain the integrity of the exclosures. The exclosure of Big Sand Spring itself, and the development of an alternative water supply for burros, has yet to be completed.

Big Sand and Little Sand Springs ACEC
INDEX



Big Sand and Little Sand Springs Area of Critical Environmental Concern (ACEC)

MAP 3-1



Livestock Grazing

The North Death Valley parcel contains a portion of the Last Chance Allotment. This allotment contains 110,000 acres of which about 39,000 acres are within the parcel. The current lessee (Jack Vogt, doing business as Lida Ranch) also leases the Magruder Mountain (Nevada) allotment which lies adjacent to the east side of the North Death Valley parcel.

Grazing use of the area dates back over 100 years. The current lessee's use dates back to 1979. The Last Chance Allotment is estimated to produce 6,981 animal unit months (AUM) of forage, of which 3,267 AUMs are allocated to cattle grazing. About 1,000 of the total AUMs are produced within the North Death Valley parcel. A general lack of water and poor forage production render many of the AUMs in the North Death Valley parcel unusable. In fact, less than 100 of the AUMs allocated to cattle grazing are produced in this parcel. Its main value to the ranching operation is in the early ephemeral forage that is produced in some years, and the corridor it provides for cattle moving back and forth between the Magruder Mountain (Nevada) Allotment and other parts of the Last Chance Allotment.

Wild Horse and Burro

The Sand Spring/Last Chance Herd Management Area is within this parcel. This Herd Management Area (HMA) is managed for total burro removal. All burros (about 130 head) were removed from the area in 1981. Aerial inventories conducted over the area in 1986 failed to find any burros. Numerous sign observed during the inventory and ground observations indicate that there may be around 12 burros using the area currently. These burros are thought to have drifted into the area from herds in Nevada or Death Valley (prior to the burro removal in the monument). The burros currently in the Sand Springs HMA are to be removed.

The eastern boundary of the North Death Valley parcel is the Nevada State line. There is no HMA on the Nevada side of the boundary. The area is slated for inventory in 1989 and any burros found there will be removed in 1989 or 1990.

Cultural Resources

Ethnographic work of the 1930s identified a subgroup of the Western Shoshone in Northern Death Valley. Interviews in the 1970s described North Death Valley as an area with subsistence, medicinal, and religious values. Prehistoric and historic resources have been recorded within the North Death Valley area: one in the western slope of the Last Chance Range, eight in Death Valley, and three on the western slope of the Grapevine Mountains. Since less than one percent of the 84,389 acres has been inventoried, additional properties within this area are anticipated.

The single recorded site in the Last Chance Range consists of flaked stone and ground stone tools, ornaments, and remains of edible plants, which suggest that the site was a camp in which the primary subsistence activity was collecting and processing mesquite and pinyon.

All of the sites in Death Valley include a lithic scatter, and five sites consist entirely of debitage and/or flakes. One site includes cores and bifaces; two, enclosures of rock; another, cores, flaked and ground stone tools, a historic cabin, a well, and historic artifacts associated with domestic and ranching activities. Uses inferred from these sites are the manufacture of stone tools, procurement of stone for tools, hunting, processing of edible plants, and ranching. One of the sites has been identified ethnographically as a summer camp.

All sites recorded on the western slope of the Grapevine Mountains include lithic scatters and tools. Two sites include groundstone artifacts, and the third is still more complex with the addition of rock enclosures or foundations and firepits. These represent the manufacture and repair of stone tools, the processing of edible plants, cooking, possibly food storage, and encampment for periods of up to several months.

Existing impacts occur from burros and livestock. Camping has also affected one site. However, the degree of disturbance has remained the same for the past ten years and appears to be stable. Wild burros have also disturbed this site during visits to the on-site water source, and BLM plans to build a trough away from the site.

Lands

The majority of the lands are public lands adminstered by the BLM. About 1,800 acres are owned by the State of California. In a previous land exchange (CA-15869), the State of California relinquished it's entitlement to an additional 3,850 acres in the area.

The public land in the North Death Valley area is identified multiple-use classification (MUC) R-697 pursuant to the Classification and Multiple Use Act of 1964. R-697 segregates from appropriation under the agricultural land laws and isolated parcel sale under RS 2477. This MUC was revoked but the revocation was subsequently set aside owing to the February 10, 1986 National Wildlife Federation injunction order.

Within the area are two Public Water Reserves (PWR) #13 (E.O. 12-1-1913) and PWR #107 (Order 2-1-1968). Lands within the PWR are withdrawn from agricultural entry and non-metalliferous mineral entry.

There are no authorizations of record in the subject area, nor are there any applications or proposals. There are no energy production or utility planning corridors in the area.

The North Death Valley parcel is within Complex 3 of the R-2508 Military Operations Area. This is a 20,000 square mile military airspace zone bounded by Bakersfield, Bishop, Las Vegas, Barstow, and Lancaster. It is managed jointly by Edwards and George Air Force Bases, the China Lakes Naval Weapons Center, and Fort Irwin. The area is used for both aircraft training, and for research and development programs. A prime goal is to decrease pilot workload at low altitudes by developing flight systems that allow pilots to fly at low altitude in all weather and night conditions.

In 1987, about 90,000 missions were conducted in the area. Use has increased significantly since 1978, when 43,000 missions were conducted. This increase has come about, in some cases, because of increased use by other bases. For example, the Lemore Naval Air Station previously used airspace over the California coast range and over the Pacific Ocean. Those areas are no longer as useful due to changes in technology and program needs. Consequently, Lemore is making much greater use of R-2508 (from 3 percent of total use in 1979 to 18 percent in 1987).

In 1977, the R-2508 Joint Policy and Planning Board signed a memorandum of agreement with the Federal Aviation Administration which prohibited flights below 3,000 feed above ground level (AGL) over the Death Valley National Monument.

Consequently aircraft on maneuvers, in an effort to stay well below this altitude, avoid the monument and fly around it via a "low-level high-speed terrain-following route" in order to reach the Nellis Range Complex in southern Nevada undetected. The present route around the north end of the monument crosses the North Death Valley Parcel. Military aircraft use of the area, generally not on prescribed flight paths, is authorized above 200 feet above ground level (AGL).

The CDCA Plan designated the area as multiple use class C (proposed wilderness; 72,709 acres), class L (limited; 9,920 acres) and class M (moderate; 1,760 acres). The multiple use class boundaries are shown on map 3-2. The Inyo County General Plan identifies the area as open space and multiple use.

Management Presence

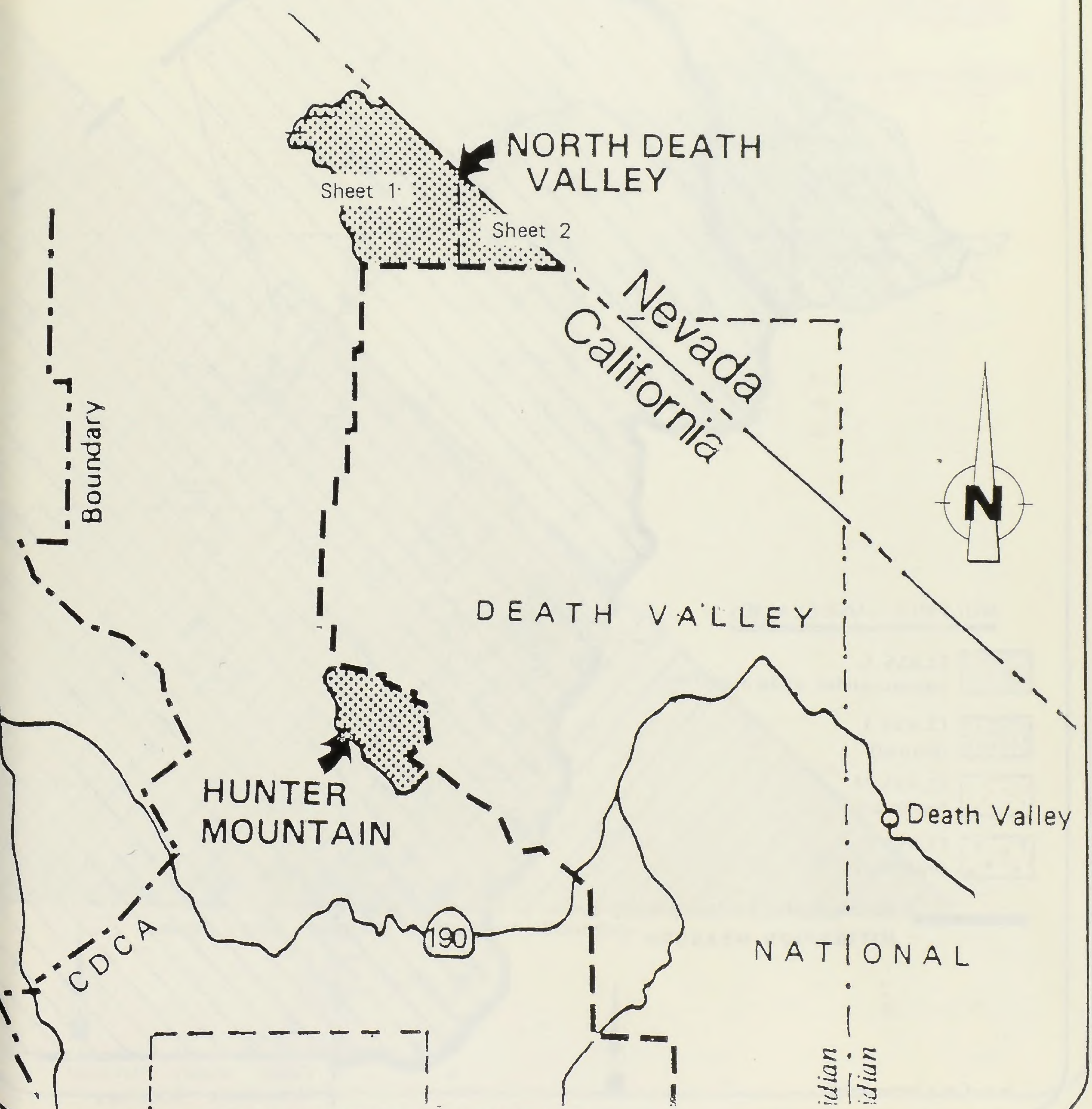
BLM's staff visited the parcel relatively infrequently prior to the recent (early 1988) expansion of BLM's ranger force. A ranger was based in Big Pine, and patrolled the parcel once a month. Resource staff specialists (e.g. biologists, archaeologists, geologists) visit an area on an as-needed basis. This might occur, for example, due to the need to process a right of way application or a mining plan of operation, or to prepare an ACEC management plan. Such visits have averaged about once per month. BLM's resources staffing is also being expanded at the present time.

The recent expansion of BLM's ranger force has changed this situation significantly. The Big Pine ranger's patrol sector is smaller, and the ranger can visit the parcel twice each week.

Recreation

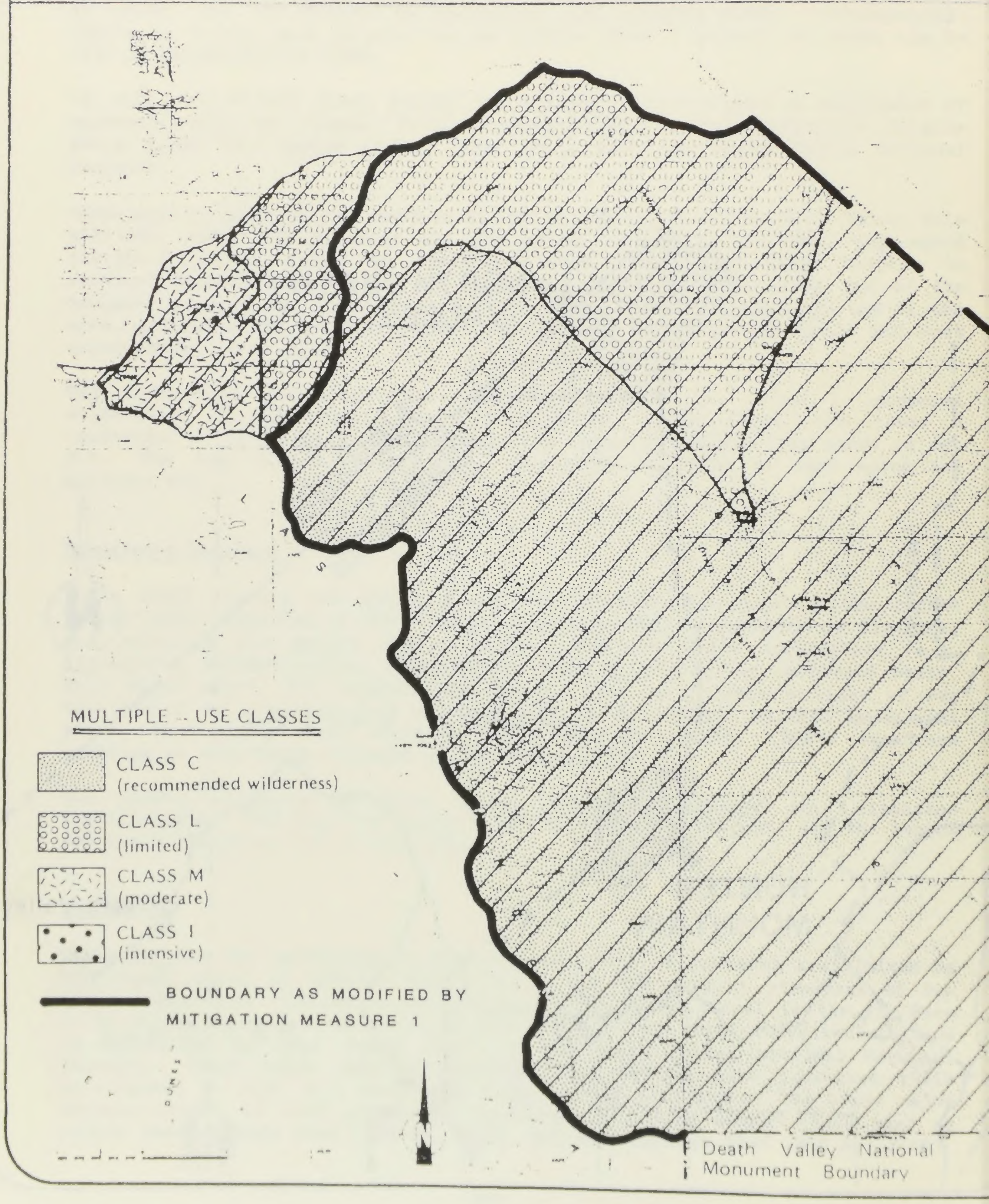
Opportunities for recreation in the northern Death Valley area are limited by the small number of vehicle access routes and the general steepness of the local topography. The major access route through the parcel is the Big Pine to Death Valley Road. This road is accessible to two wheel drive vehicles and is maintained by Inyo County north of the Death Valley National Monument boundary. Inyo County and the National Park Service have indicated their willingness to pave this road when funds become available. The other major vehicle routes in this parcel are ranching and mining access roads such as Little Sand Springs Road (BLM No. F107) and Sand Springs Road (BLM No. F106).

North Death Valley Index
BLM - CDCA Plan Multiple-Use Class Map 3-2



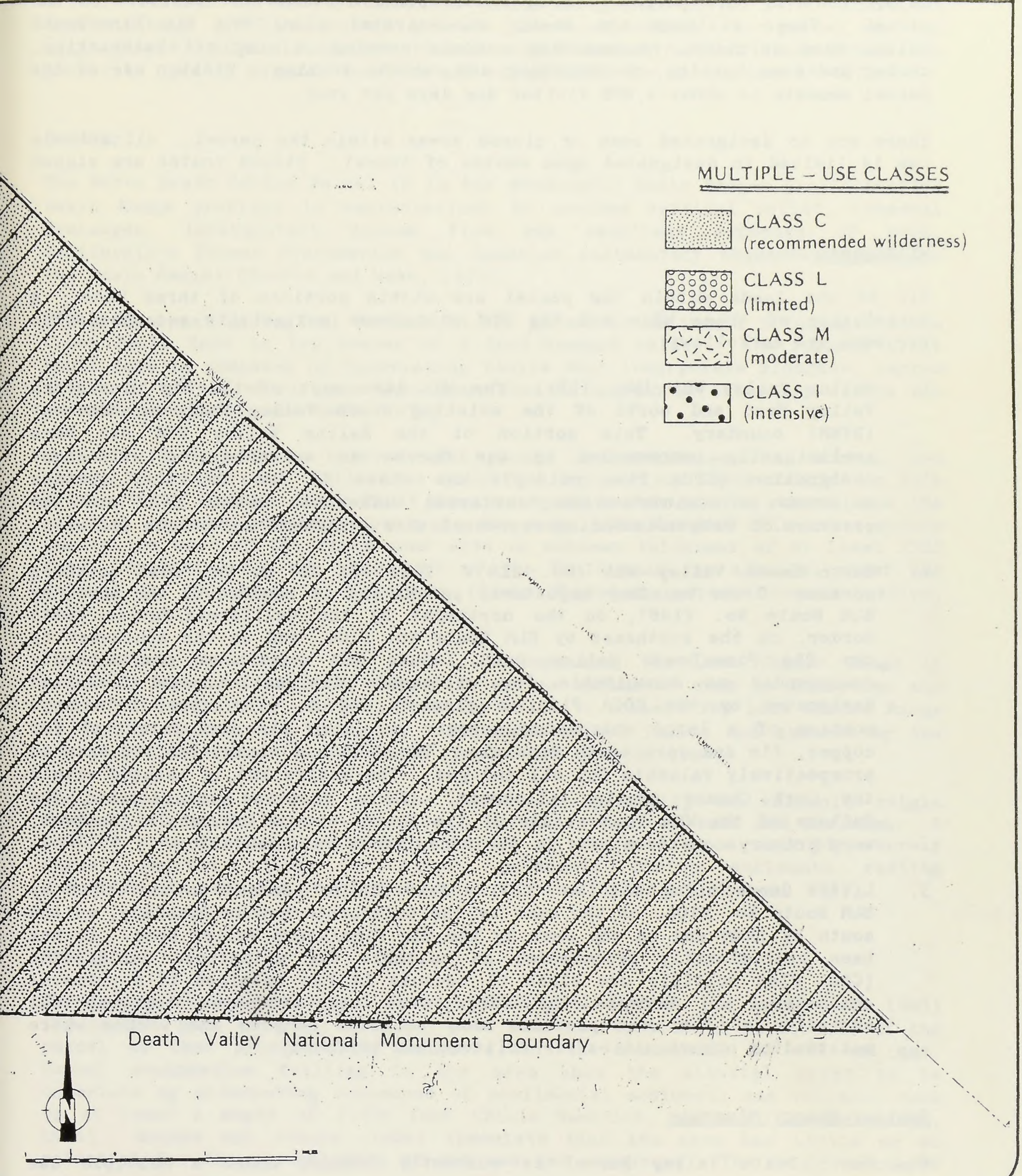
North Death Valley

BLM - CDCA Plan Multiple-Use Class Map MAP 3-



North Death Valley

BLM - CDCA Plan Multiple-Use Class Map MAP 3-2



Sheet 2 of 2

Route 106 serves as a boundary between BLM WSA 118 and WSA 119. A well established ranching road (BLM No. F1987) also makes up the northern edge of this boundary adjustment area. There are several other spur routes off of the major roads in this parcel. These routes provide access for visitors to the parcel. These visitors are mostly concentrated along the Big Pine/Death Valley Road corridor, representing vehicle camping, hiking and backpacking, chukar and deer hunting, rockhounding and vehicle touring. Visitor use of the parcel amounts to about 1,000 visitor use days per year.

There are no designated open or closed areas within the parcel. All vehicle use is limited to designated open routes of travel. Closed routes are signed closed.

Wilderness

All of the lands within the parcel are within portions of three WSAs. A description of these WSAs and the BLM wilderness suitability recommendation for each are as follows:

1. Saline Valley WSA (No. 117). The WSA lies west of the Big Pine/Death Valley Road and north of the existing Death Valley National Monument (DVNM) boundary. This portion of the Saline Valley WSA has been preliminarily recommended by the Bureau as suitable for wilderness designation (CDCA Plan multiple use class C) due to it's location adjacent to administratively endorsed wilderness within DVNM and the presence of both outstanding representative landforms and unique features.

2. North Death Valley WSA (No. 118). This WSA is in the most northern portion of the boundary adjustment parcel and is bounded on the north by BLM Route No. F1987, on the northeast by the California/Nevada state border, on the southeast by BLM Route No. F106, and on the southwest by the Big Pine/Death Valley Road. This WSA has been preliminarily recommended as nonsuitable for wilderness designation, and has been designated by the CDCA Plan as class L and M. The site includes a portion of a large molybdenum deposit and also displays potential for copper, tin and rare earth minerals. The USGS has classified the area as prospectively valuable for oil and gas. The entire WSA is located within the Last Chance grazing allotment. These resource values, and the failure of the WSA to meet any of the desert-wide wilderness objectives, were primary considerations in the nonsuitable recommendation.

3. Little Sand Spring WSA (No. 119). This WSA is bounded on the north by BLM Route No. F106, on the east by the California/Nevada boundary, on the south by DVNM and on the west by the Big Pine/Death Valley Road. It has been preliminarily recommended as suitable for wilderness designation (CDCA Plan multiple use class C) because it has retained it's primeval character, and because the large size and extensive topographical variation of the area provides many secluded canyons and washes where outstanding opportunities for solitude can be found.

Geology-Energy-Minerals

The North Death Valley Parcel is currently managed under a multiple use concept. Mineral exploration and extraction is governed under the Mining Law of 1872 (and amendments), the Mineral Leasing Act of 1920, the Mineral Materials Act of 1947 (as amended in 1955 by P.L. 167), the Geothermal Steam Act of 1970 and the Federal Land and Policy Management Act of 1976. There are approximately 1,800 acres of private fee land within the parcel and no split-estate (public surface, private subsurface). Federal land within the parcel is open to mineral location and entry under the Mining Law of 1872.

Geology

The North Death Valley Parcel is in the geomorphic Basin Ranges province. The Basin Range province is characterized by extreme vertical relief, internal drainages, intermittent stream flow and excellent exposure of rock. California's finest Precambrian and Cambrian sedimentary sequences appear in the Basin Ranges (Norris and Webb, 1976).

The predominant geological feature in the parcel is northwest trending Furnace Creek Fault Zone in the center of a down-dropped valley. The Furnace Creek Fault Zone is composed of interlacing faults that incorporate elongate, narrow slices of crust, which have been down faulted and moved laterally within the parcel area (Norris and Webb, 1976).

Much of the parcel is covered with young, unconsolidated fan, stream, and valley fill deposits. Drill hole data from exploration holes drilled on both sides of the Furnace Creek Fault Zone near the center of the parcel show the alluvial sequence to thin rapidly to the east. The deepest alluvial sequence was to the west of the fault zone with an unknown thickness of at least 1500 feet. Approximately one mile east of the fault zone the alluvial cover had thinned to 290 feet in thickness (Dixie Hambrick, personal communication, 1988).

The western portion of the parcel, encompassing the Last Chance Range is primarily composed of older Paleozoic marine sediments such as limestone and dolomite, overlain by younger, Tertiary volcanic rocks. The Last Chance Range is highly faulted and broken by high angle normal faults and sheared by the low angle Last Chance thrust fault (Taylor and Joseph, 1987).

The southeastern portion of the parcel is primarily of volcanic origin composed of basalt flows, ash flows, rhyolite, dacite, tuff and obsidian. A smaller area in the southeastern portion of the area is a zone of severely thrust faulted slices of older, paleozoic marine sediments resting unconformably over the younger volcanic terain (Taylor and Joseph, 1987).

Energy

The United States Geological Survey (USGS), classified (as amended in 1985) the central part (T 9 S., R 40 E., west half and T. 9 S., R 41 E, all) of the parcel as land prospectively valuable for the occurrence of oil and gas. Recent exploration drilling in the area show the alluvial cover to be underlain by alternating sequences of continental sediments and volcanic rock to at least a depth of 2,000 feet (Dixie Hambrick, personal communication, 1988). Wrucke and others (1984) speculate that the area has little or no potential for the accumulation of oil and gas resources. The large volume of

Mesozoic intrusive rock in the area would have provided sufficient heat to drive off or degrade any accumulation of hydrocarbons in pre-Tertiary rock.

Minerals

Leases and Mining Claims: A review of the BLM mining claim records (April 12, 1988 version) reveals the existance of 169 lode claims, 11 placer claims and 1 millsite in the parcel. The majority of claims are concentrated in the vicinity of the Crater Mine area. A number of these claims were located prior to 1976. A second, newer group of claims are concentrated south of Little Sand Spring in the center of the parcel. The third concentration of claims are located in the southeast portion of the parcel near the northern boundary of Death Valley National Monument.

Mineral Potential Overview: Mines and prospects within the parcel have produced substantial quantities of sulphur and mercury. The northeastern portion of the area is underlain by a small part of a massive disseminated molybdenum deposit. The area surrounding Crater has a moderate to high potential for the occurrence of mercury, sulphur, gypsum, and gold. An area on the extreme eastern border of the parcel has moderate potential for the occurrence of silver. An area on the southern border of the parcel and two isolated areas in the central and southwestern portion of the parcel have moderate potential for the occurrence of gold and silver mineralization. A small area in the central portion of the parcel has moderate potential for the occurrence of borate minerals. Limestone deposits are extensive in the western part of the parcel. Map 3-3 shows the areas of mineral potential and defines the high and moderate classifications.

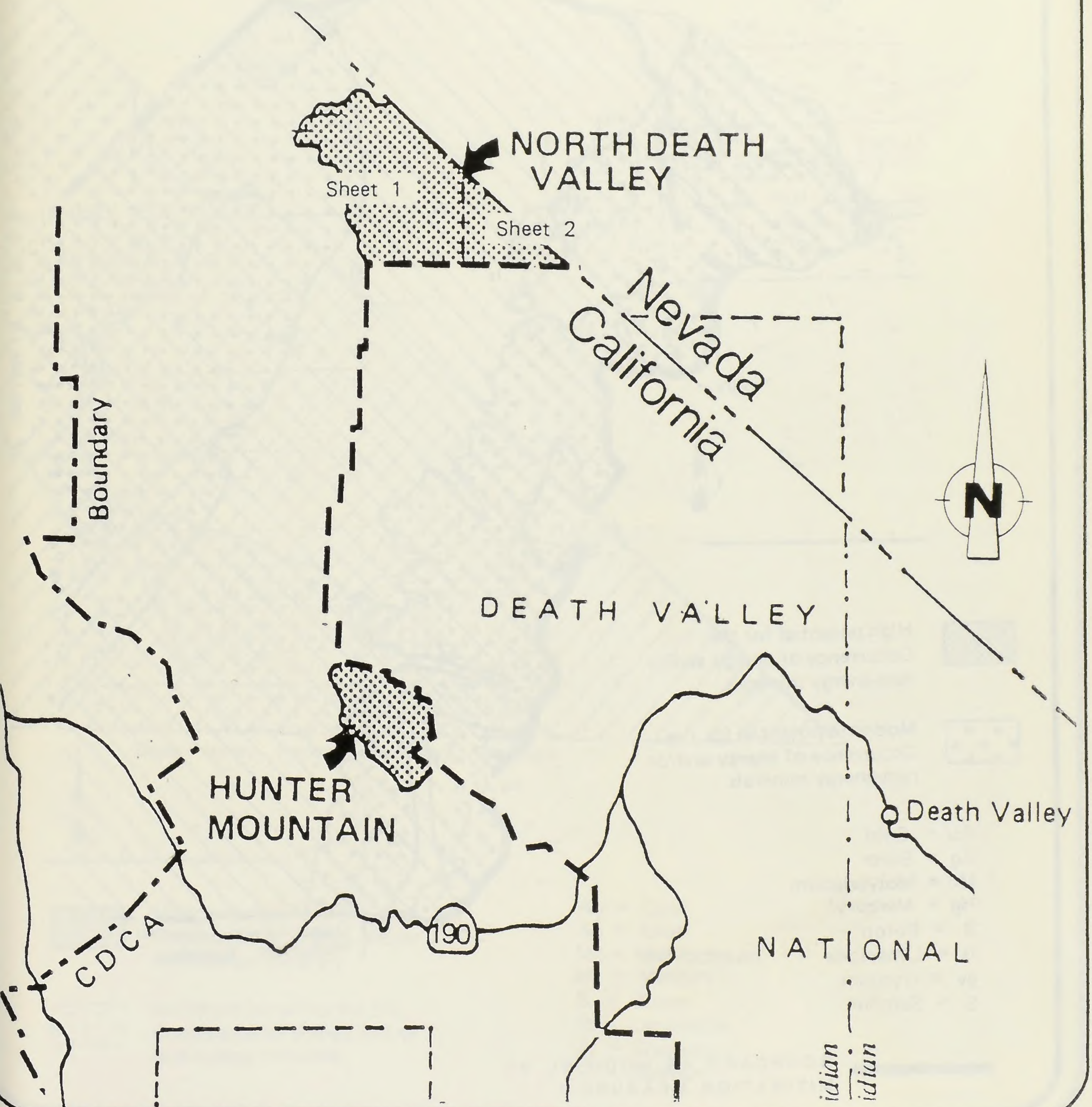
Mercury: Cinnibar, a mercury ore, was mined from Crater southward along the Last Chance Range until 1971. Mining activity occurred at the time of high mercury prices, $536 per flask in 1968; activity in this area ceased when prices droppped to under $300 per flask in 1971 (Taylor and Joseph, 1987). Numerous mercury mines and prospects combined with anomalous geochemical values of mercury (Miller, 1983) provide the basis for the high to moderate mercury potential classification in the northwestern part of the parcel.

Sulphur: Substantial deposits of sulphur were discovered in the Last Chance Range in 1915 with production beginning in 1929 at the Crater mine and continuing intermittently until 1969 (Taylor and Joseph, 1987). The Crater Group is considered to be the largest known deposit of sulphur in California. A conservative estimate places the reserves on the Crater Group of claims at 1,350,000 tons of 40 percent sulphur (Norman and Miller, 1951). The area surrounding the Crater mine has a high to moderate potential for the occurence of sulphur deposits.

Gypsum: Gypsum occurs in a series of Tertiary rock, in the form of gypsum-impregnated limestone breccias in association with sulphur in the Crater area (Norman and Miller, 1951). The Crater area has undergone extensive hydrothermal alteration (Taylor and Joseph, 1987) which may be source of fluids for the metamorphism of limestone and deposition of hydrous calcium sulfate (gypsum) mineralization. The area surrounding the Crater mine has a moderate potential for the occurrence of undiscovered deposits of gypsum.

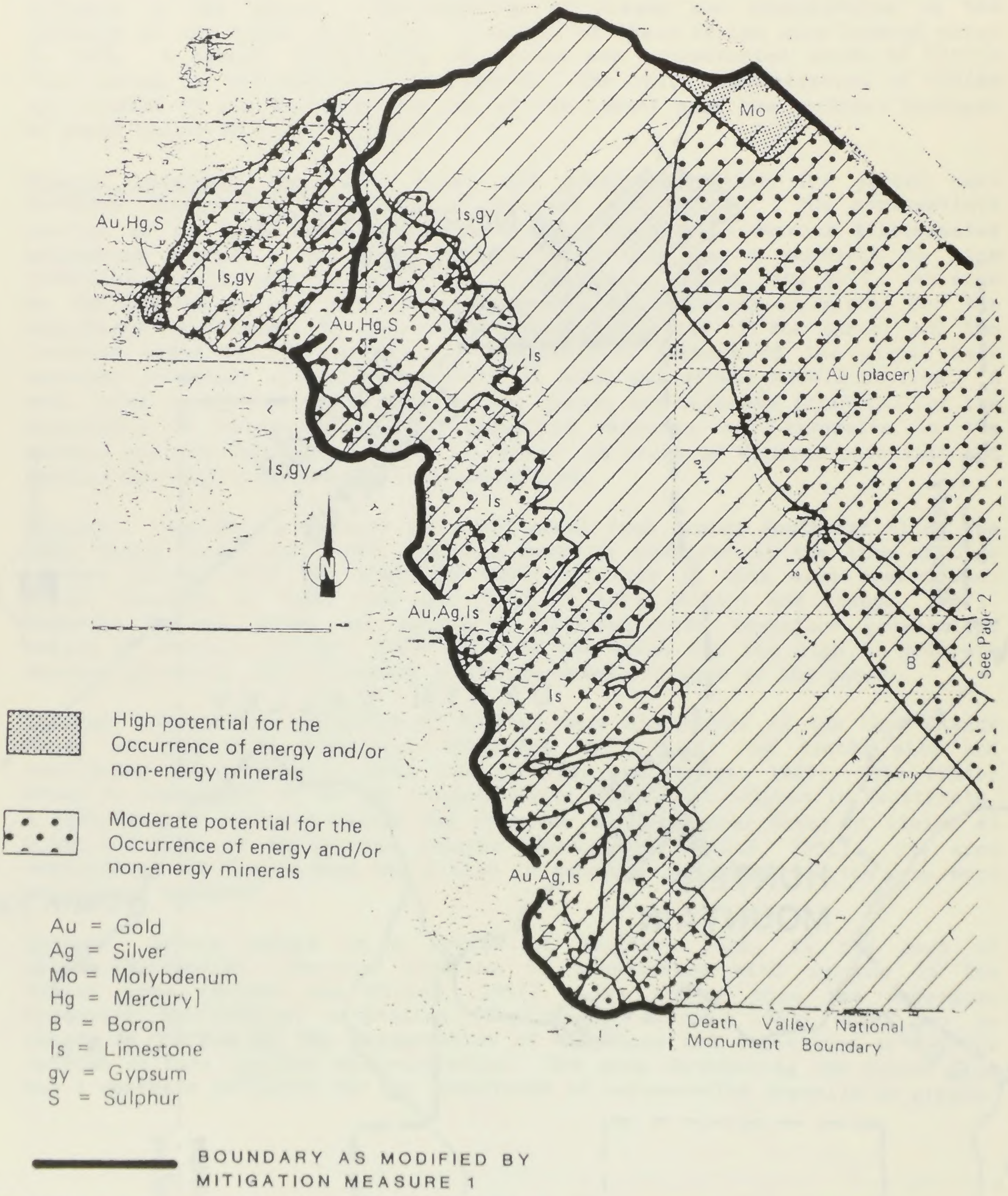
North Death Valley Index Mineral Resources Potential

MAP 3-3



North Death Valley
Mineral Resources Potential

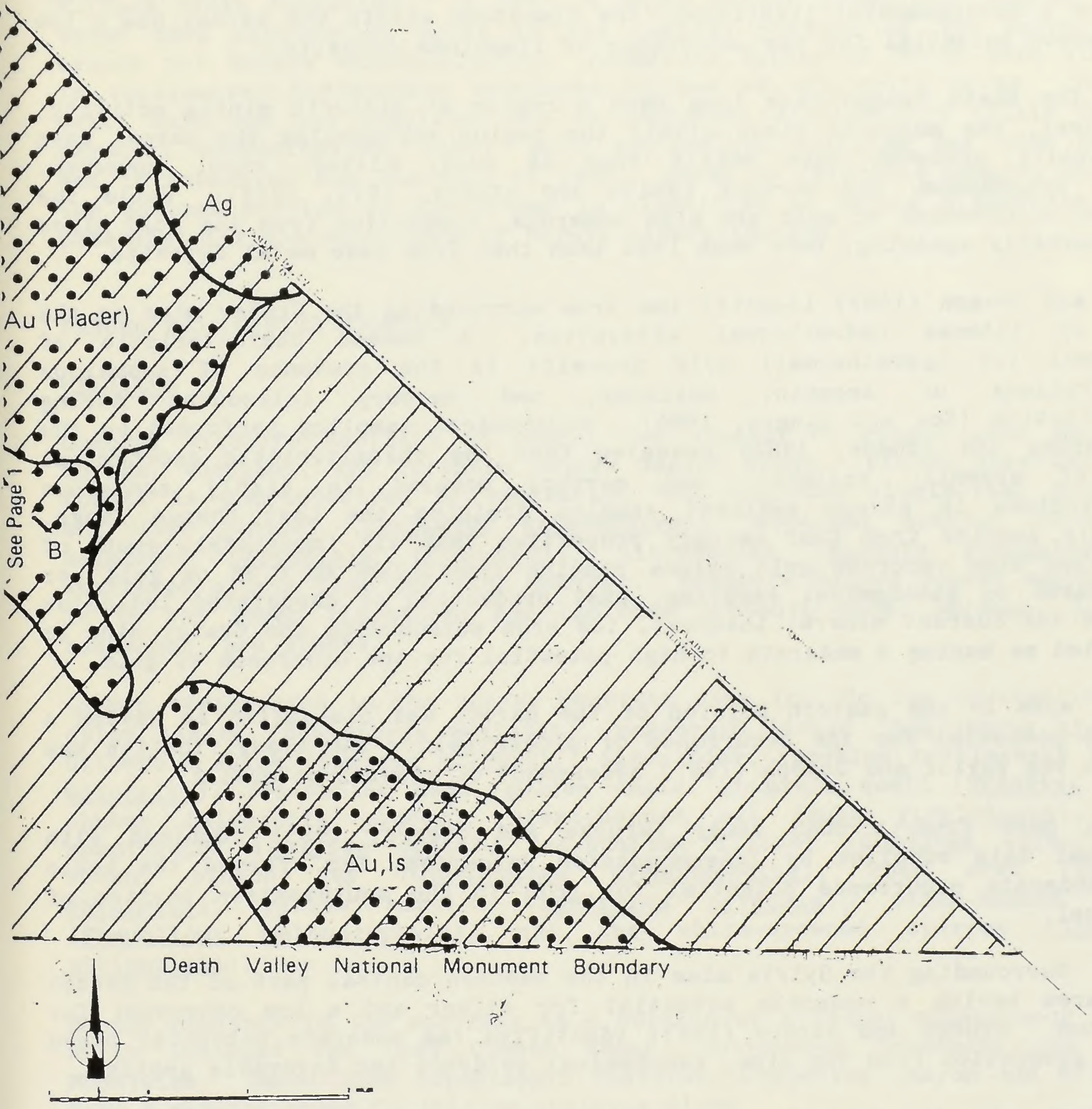
MAP 3-3


Mo
Au,Hg,S
Is,gy
Is,gy
Au,Hg,S
Is
Au (placer)
Is,gy
Is
Au,Ag,Is
B
See Page 2
Is
Au,Ag,Is
Death Valley National Monument Boundary
N
High potential for the Occurrence of energy and/or non-energy minerals
Moderate potential for the Occurrence of energy and/or non-energy minerals
Au = Gold
Ag = Silver
Mo = Molybdenum
Hg = Mercury]
B = Boron
Is = Limestone
gy = Gypsum
S = Sulphur
BOUNDARY AS MODIFIED BY MITIGATION MEASURE 1

Sheet 1 of 2

North Death Valley

Minerals Resources Potential MAP 3-3



▩ High potential for the Occurrence of energy and/or non-energy minerals

⁘ Moderate potential for the Occurrence of energy and/or non-energy minerals

Au = Gold
Ag = Silver
Mo = Molybdenum
Hg = Mercury]
B = Boron
ls = Limestone
gy = Gypsum
S = Sulphur

Sheet 2 of 2

Limestone: Carbonate rock is present in small (less than several thousand feet long) to large (more than several miles long) masses consisting of limestone, dolomite and marble of various composition. Only minor historic production has been recorded within the parcel area; however, age- and composition-equivalent rocks have been extensively mined elsewhere in the desert region. These units could represent important resources of carbonate rock suitable for a number of industrial uses (Taylor and Joseph, 1987). Based on a developmental likelihood, the limestone within the parcel has a low to moderate potential for the occurrence of limestone deposits.

Gold: The Basin Ranges have long been a region of historic mining activity. In general, the majority mines within the region surrounding the parcel have historically produced base metals such as lead, silver, zinc, tungsten, copper, molybdenum, and mercury (Smith and others, 1971, 1974). While the reported occurrences of gold are also numerous, production from the gold mines has, generally speaking, been much less than that from base metal deposits.

Taylor and Joseph (1987) identify the area surrounding the Crater mine as the locus of intense hydrothermal alteration. A common characteristic of epithermal (or hydrothermal) gold deposits is the presence of anomalous concentrations of arsenic, antimony, and mercury introduced during mineralization (Cox and Singer, 1986). Geochemical sampling performed by the USGS (Wruke and others, 1984) revealed that the characteristic geochemical suite of arsenic, antimony, and mercury occured in highly anomalous concentrations in stream sediment samples draining the Last Chance Range. Rock chip samples from four mercury properties that lie immediately south of the Crater mine recorded gold values ranging from 0.006 to 0.28 oz gold per ton. Based on geochemical sampling, past production of associated indicator minerals and current mineral interest, the area surrounding the Crater mine is classified as having a moderate to high potential for the ocurrence of gold.

A large area in the eastern portion of the parcel was classified as having a moderate potential for the occurrence of placer gold. The classification was based on the Taylor and Joseph (1987) assessment of mineral potential.

Exsiting data from a USGS study (Wrucke and others, 1983) combined with additional data supplied by Intermountaion Resources, Inc. formed the basis for a moderate occurrence potential for gold in the southeastern portion of the parcel.

Silver: Surrounding the Sylvia mine in the eastern central part of the parcel is an area having a moderate potential for silver and a low potential for molybdenum. Wrucke and others (1983) identified the moderate potential based on past production from the mine, geochemical evidence and favorable geology.

Molybdenum: In the Magruder Mountain-Sylvania Mountain area of Esmerelda County, Nevada, three molybdenum deposits have been known and actively explored since 1960 (Taylor and Joseph, 1987). The deposits were known as the Sylvania mine, Cucomongo deposit and McBoyle deposit, all located within close proximity to the California-Nevada border. During the period form 1969 to 1975, 15 diamond drill holes that produced about 17,000 feet of drill core were drilled by Amoco-Marathon on the Ace Hills, near the headwaters of Copper Canyon (Taylor and Joseph, 1987). The BLM Final EIS and Proposed plan for the CDCA, volume G, page 79, cite, on the basis of proprietary data, a resoure figure of 1,600,000 lbs of molybdenum for the Stateline (combined Sylvania, Cucomongo and McBoyle) deposit. The southern extension of the Stateline deposit, in the northeast part of the parcel area, is classified as having a high potential for the occurrence of molybdenum.

Boron (Borates): The southern and central Death Valley regions have long been producers of borate compounds. McAllister (1970) describes the principal borate deposits to be in continental sedimentary rocks near the base of the Furnace Creek Formation. In 1987, a major borate production company drilled three deep exploration holes in the central portion of the parcel in the search for borate mineralization. Anomalous values of boron were discovered in continental sedimentary sequences in two of the drill holes. The third drill hole was not completed due to technical difficulties (Dixie Hambrick, personal communication, 1987). More exploratory drilling has been permitted and is scheduled for the fall of 1988. Based on favorable assays, an area in the central portion of the parcel is classified as having a moderate to high potential for the occurrence of borate mineralization.

PARCEL TWO: HUNTER MOUNTAIN

Wildlife

General wildlife habitats in parcel two consist of pinyon pine and juniper forest, woodland, and northern Mojave Desert scrub. Pinyon pine and juniper forest is characterized by vegetation that includes single-leaf pinyon pine and Utah juniper (Juniperus osteosperma). Woodland habitat includes big sagebrush (Artemisia tridentata), bitterbrush (Purshia glandulosa), and scattered pinyon pine and Utah juniper. Northern Mojave Desert scrub habitat is in the lower elevations and includes creosote bush, bursage, joint-fir, buckwheat, and others.

Common vertebrates in the Hunter Mountain area include the chuckwalla, desert spiny lizard (Sceloporus magister), sagebrush lizard (Sceloporus graciosus), Gilbert's skink (Eumeces gilberti), sidewinder, speckled rattlesnake (Crotalus mitchelli), red-tailed hawk, golden eagle, mountain quail (Oreortyx pictus), chukar (Alectoris graeca), great-horned owl (Bubo virginianus), Costa's hummingbird (Calypte costa), red-shafted flicker (Colaptes cafer), common raven, pinyon jay (Gymnorhinus cyanocephalus), rock wren (Salpinctes obsoletus), yellow warbler (Dendroica petechia), black-headed grosbeak (Pheucticus melanocephalus) and the white-crowned sparrow (Zonotrichia atricapilla).

Hunter Mountain in its entirety is a portion of a larger mountainous ecosystem which includes the Last Chance Range, Cottonwood Mountains and Panamint Mountains. Based upon topographic features, Grapevine Canyon and Mill Canyon form a natural break in this mountainous block.

Unique Habitats

Within the generalized habitats occur riparian and aquatic habitats which are extremely important to a great majority of the fauna. Many amphibians, reptiles, birds and mammals require riparian and aquatic habitats to varying degrees to survive. The known aquatic and riparian habitats within the parcel by name or geographic location are as follows:

Grapevine Canyon
Jackass Canyon
Mill Canyon
Unnamed springs east of Mill Canyon
Quail Spring
Jackass Spring
Dead Horse Spring
Spanish Spring
Big Dodd Spring
Little Dodd Spring
Unnamed springs in canyon south of Little Dodd Spring

Significant Species

Desert Bighorn: Desert bighorn, a sensitive species, occurs in suitable habitat throughout the parcel (map 3-3; note habitat areas A and B). A majority of the recorded bighorn sightings have been in the Grapevine Canyon and Dodd Springs areas. About 30 bighorn are believed to occur within the parcel, and about 20 of these are located in the area where most of the sightings have occurred (Aardahl, personal communication; Blankinship, personal communication, Weaver and Mensch 1970, Weaver 1982).

Bighorn, primarily rams, have the ability to travel extensively throughout the area. The Hunter Mountain area is actually at the intersection of several "corridors" used by bighorn to access adjacent mountain ranges, specifically the Panamint, Cottonwood, Last Chance, Nelson and Inyo. Bighorn travel extensively throughout the mountain ranges that are contiguous to Hunter Mountain.

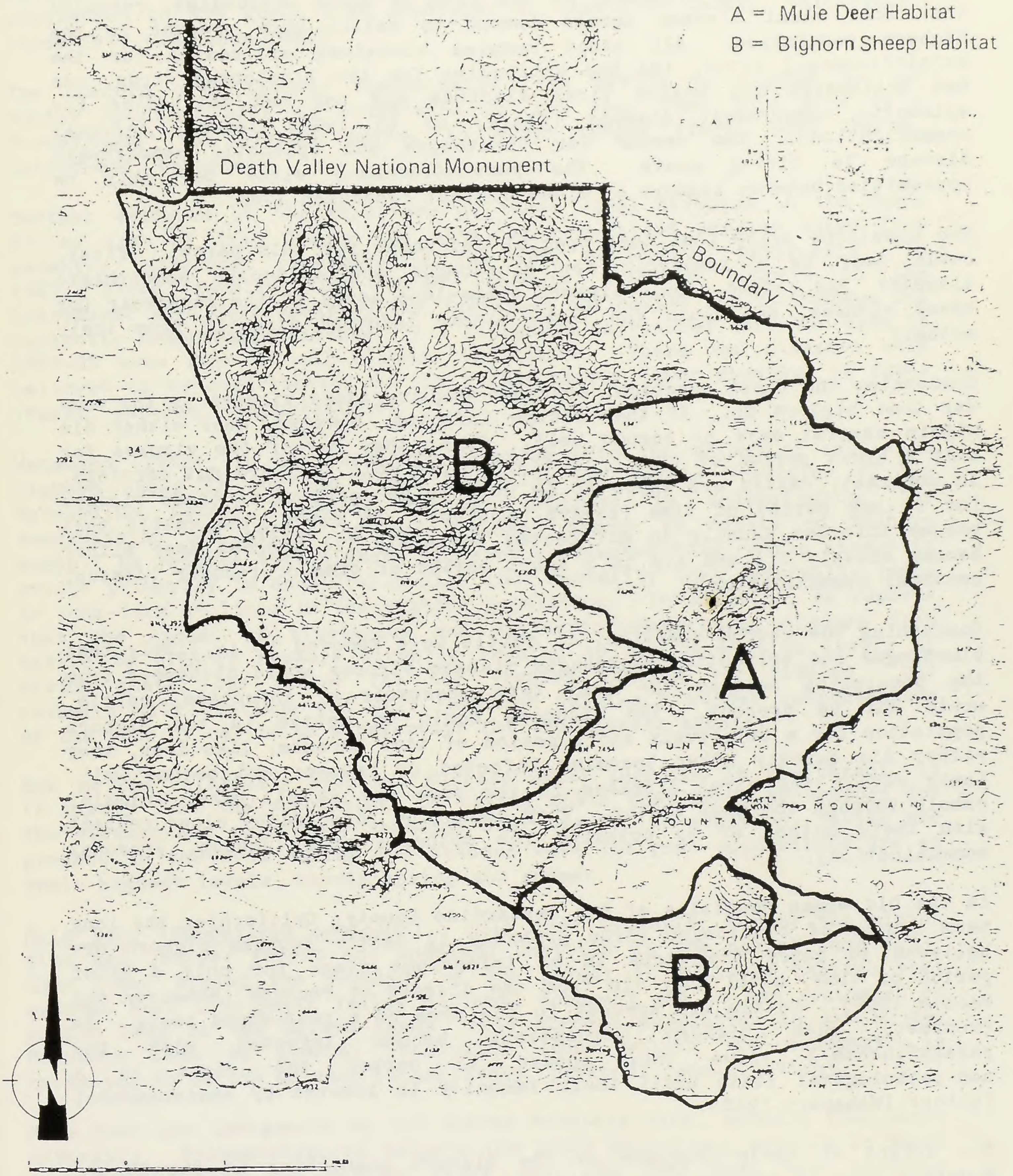
The Hunter Mountain area, and habitat area B in particular, are important areas for bighorn and other wildlife. The area exhibits considerable altitudinal variation, relatively abundant surface water compared to surrounding areas, and contains a variety of distinct habitats that allow for great species diversity. The rugged topography and surface water in habitat area B, especially in the Grapevine Canyon and Dodd Springs areas, is ideal bighorn habitat that is highly favored by this species.

The current bighorn population is likely depressed due to habitat deterioration resulting from excessive grazing by wild horses and burros (and, to a lesser extent, cattle) as well as the presence of burros, horses and cattle in some of the key habitat areas. Extremely high numbers of burros and horses, coupled with cattle in the Hunter Mountain Livestock Allotment, existed within the parcel until the early 1980's when significant reductions in horses and burros occurred through trapping programs conducted by the BLM and the National Park Service.

Viral Disease Transmission from Cattle to Bighorn: According to Jessup (1983), bighorn sheep are likely the most sensitive wild ungulate in North America to diseases and parasites common to domestic livestock. Livestock, in this case, refers to cattle and sheep and not burros or horses. Jessup (1983), in a letter to the U.S. Forest Service, stated that he knew of no disease common to horses or burros which reportedly affect bighorn sheep.

Hunter Mountain Habitat

MAP 3-4



Between 1983 and 1985, the California Department of Fish and Game conducted a study of the incidence of diseases in wild populations of bighorn sheep in mountain ranges in the desert regions. Blood samples were taken and analyzed for evidence of viral diseases common to domestic livestock. Blood samples from three bighorn taken from Hunter Mountain revealed evidence that disease agents common to domestic livestock were likely present. The evidence, in the form of serum antibodies, revealed that four viral disease agents common to cattle were present in the bighorn population. All blood samples contained antibodies for the parainfluenza-3 virus, two had antibodies for the bluetongue virus, one had antibodies for bovine viral diarrhea and one had antibodies for epizootic hemorrhagic disease (Clark, et al 1985; Jessup, personal communication). The vector for bluetongue and epizootic hemorrhagic disease is biting gnats. The parainfluenza-3 virus may only be transmitted between bighorn by close contact (Wehausen 1988).

Two questions arise that have special relevance for this parcel. First, could deer be a reservoir for bluetongue and epizootic hemorrhagic disease? And second, could bighorn themselves serve as the reservoir for these viruses, and could the lambs become infected directly from their mother?

Concerning the first question, deer can acquire these viruses in the same way that bighorn do. If they become infected, however, deer either die within several days or become well. Thus, they harbor the viruses for only a short period of time. If they become well they are not carriers. In contrast, cattle are known to be able to be carriers of these viruses for a long period of time (several months). In short, the cattle that become infected usually do not become seriously ill whereas deer either become acutely ill and die in a short period of time or recover (Jessup, personal communication).

Concerning the second question, if cattle were removed it is likely that bluetongue and epizootic hemorrhagic disease viruses would disappear from the population because the long term reservoir of infection, cattle, would not be present. The diseases could be active in the bighorn population for a relatively short period of time because, like deer, they either die quickly after becoming infected or recover and become well. Lambs obtain the viral diseases in the same way as all other animals, namely through the gnat vector. They cannot be infected by close contact with their mother or by drinking the mother's milk (Jessup, personal communication).

In the Old Woman Mountains of San Bernardino County, California, the long term source of bluetongue virus probably is cattle because bighorn are believed to carry the virus in an infectious stage for only a brief period of time, until they die from the disease or recover (Wehausen and Hansen 1986). Cattle are present in the area on a year-round basis. In contrast, once bighorn populations become infected with the parainfluenza-3 virus they appear to harbor the virus in a non-pathological state until their immunity is lowered by environmental factors (Wehausen 1988).

The effect of these diseases on the bighorn population in the Hunter Mountain area is unknown. In a desert wide survey of bighorn populations and diseases, it was determined that four herds with increasing populations were relatively free of evidence of diseases common to cattle (Clark, et al 1985). It was also determined that four other herds in the desert with stable or decreasing populations contained evidence of significant levels of disease agents common to cattle. Three viruses, bluetongue, epizootic hemorrhagic disease and parainfluenza-3, have been related to significant lowered recruitment of bighorn lambs into the population in the Santa Rosa Mountains in Riverside County, California, since 1977 (Wehausen 1986).

The concern over disease transmission from cattle to bighorn in the Hunter Mountain area is heightened by the fact that this area is a "crossroads" for bighorn moving to other ranges (Inyo, Last Chance, Cottonwood, Panamint).

Further evidence of the existence of these viral diseases in the Owens Valley area of Inyo County was obtained from blood samples taken from recently introduced pronghorn in the area of Benton, California. In 1987, blood samples from three randomly selected animals in the introduced herd were analyzed and contained antibodies for bluetongue and epizootic hemorrhagic disease. All pronghorn introduced into the area in 1984-85 were free of all disease indicators. These two diseases were believed to be contributing to the significantly lower survival of fawns (Russi, personal communication).

Wehausen (1988), in his continued research into the effect of cattle on bighorn sheep in the Old Woman Mountains and Marble Mountains of San Bernardino County, reports further progress in understanding the transmission and effect of two diseases common to cattle on bighorn sheep. He reports that bighorn diseases contracted from cattle appear to result primarily in unnaturally high lamb mortality that eventually leads to long-term declines in the bighorn population. In addition, he reports that the spread of bluetongue and epizootic hemorrhagic disease from cattle to bighorn appears directly related to the population levels of biting gnats, the vector for the viruses causing the disease. His research will continue and will focus on gaining a better understanding of the role of cattle as a reservoir for the disease agents.

Due to the relatively abundant surface water supplies in the parcel, it is likely that the populations of biting gnats that serve as vectors for the viruses are relatively abundant every year. In addition, cattle are present in the area during the seasons when the gnat populations are at their highest levels, namely spring and summer.

Mule Deer (Odocoileus hemionus): Mule deer typically occupy the pinyon pine and juniper forest and woodland habitats in the parcel (map 3-3). They occur beyond the boundary of the parcel in suitable habitat that extends east into Death Valley National Monument and to the southwest on public land in the Nelson Range. The current population in the Hunter Mountain area in general (including lands within the monument) is estimated to be 150 animals (Blankinship, personal communication).

Mule deer are indigenous to the Hunter Mountain area, meaning they occur naturally. Paleontologists believe the genus Odocoileus arrived in North America at least two million years ago, and that deer have probably resided in the southern quarter of their range in the southwest, including portions of Mexico, continuously since their occurrence in North America (Wallmo 1981).

Mule deer populations fluctuate due to a variety of environmental factors, including forage availability and quality, predation, disease and possibly hunting pressure in some areas. Deer population levels or densities in an area directly influence the frequency of observations. Populations in the intermountain west reportedly increased in many areas between 1930 and 1960.

The reason for this change, according to Greull (1986) was succession of vegetation in the habitat from a condition dominated by grasses to one dominated by woody shrubs. Intensive livestock grazing and a reduction in the frequency and extent of fires led to this shift in vegetation. Deer favor habitat containing browse as opposed to grasses. However, the reported increase in deer populations throughout the intermountain west has generally ended and declines are widespread as woody plants become overly mature and dense, native bunchgrasses have been removed by excessive grazing and government agencies have become more involved in fire suppression (Gruell 1986).

Mule deer are hunted in the parcel and on adjacent public lands during the fall season. Most if not all hunting (and deer taken) occurs in the vicinity of the Hunter Mountain road from Jackass Spring to Spanish Spring, and the average annual deer harvest from this area is approximately six animals (Blankinship, personal communication). Hunting pressure and harvest in the parcel is relatively low, but those who participate in the sport derive considerable enjoyment from this wilderness type of hunting area.

Mountain Lion (Felis concolor): Mountain lion naturally occur in the parcel, especially within the pinyon pine and juniper forests and rocky areas. They are most often associated with mule deer, the primary prey species. Mountain lions may also prey upon other species, including bighorn sheep, jackrabbit, and coyote. However, other predators, including coyote, bobcat and golden eagle also prey on bighorn in addition to other species (Kelly 1981).

Slender Salamander (Batrachoseps sp.): There is potential for a species of slender salamander to occur in riparian and aquatic habitats in Grapevine and Jackass Canyons. The nearest known occurrence of a slender salamander, the Inyo Mountains salamander (Batrachoseps campi), is approximately 20 miles to the northwest in several canyons in the Inyo Mountains (Giuliani, no date). This salamander is a candidate for proposed listing as a threatened or endangered species under the Federal Endangered Species Act (U.S. Fish and Wildlife Service 1985).

Panamint Alligator Lizard (Elgaria panamintinus): The Panamint alligator lizard occurs in and adjacent to riparian habitat in Grapevine Canyon (Banta 1963), and possibly other similar habitats in the parcel, such as Jackass Canyon, Mill Canyon, etc. This species is a candidate for proposed listing as a threatened or endangered species under the Federal Endangered Species Act (U.S. Fish and Wildlife Service 1985).

Panamint Kangaroo Rat (Dipodomys panamintinus panamintinus): The Panamint kangaroo rat occurs throughout the parcel and in limited areas outside the parcel in Death Valley National Monument and the Nelson Range. This population is one of three known populations of this subspecies in the northern Mojave Desert. The other two are located in the Argus Range within the China Lake Naval Weapons Center and in South Park of the Panamint Range (Bureau of Land Management 1980). It is considered significant due to its limited distribution.

Birds of Prey: One red-tailed hawk (Buteo jamaicensis) nest site has been recorded in the lower Grapevine Canyon area, based upon a helicopter survey conducted in 1977 (Thelander 1977). Additional surveys in the parcel would probably reveal the occurrence of other raptor nesting sites.

Upland Game Birds: Mountain quail (Oreortyx pictus) and chukar (Alectoris graeca) are common in portions of the parcel. The chukar is an introduced exotic species that provides considerable sport hunting opportunity. Both species are hunted annually during established hunting seasons in the fall and winter.

Botany

There are no known BLM sensitive, state-listed rare or endangered, or Federal-listed threatened or endangered plant species in this parcel.

Livestock Grazing

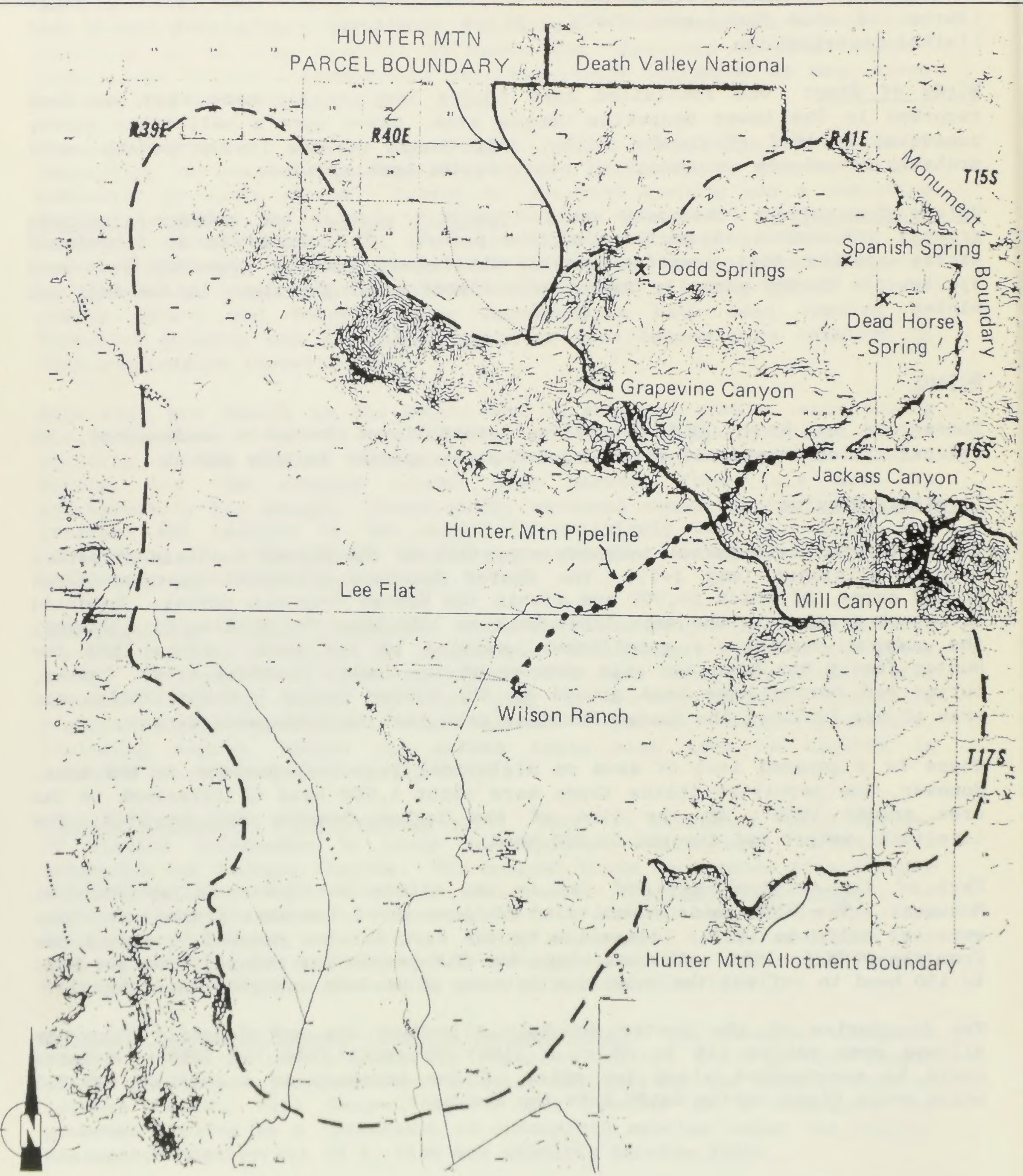
The Hunter Mountain parcel includes a portion of the Hunter Mountain livestock grazing allotment (map 3-5). The Hunter Mountain allotment contains about 60,000 acres, of which 24,000 are within the Hunter Mountain parcel. Domestic livestock grazing in the area dates back to 1868 when Mr. William Lyle Hunter, the current permittee's grandfather, settled in the area. Since 1868 the Hunter family has been the sole grazier of the Hunter Mountain area. Cattle, burros and horses have been grazed by the Hunter family. Historically, the area of use included the Hunter Mountain area east to Cottonwood Canyon.

There is a general lack of data on historical livestock numbers in the area. However, the permittee thinks there were about 1,000 head of livestock in the area around 1900. By the time of the Taylor Grazing Act in 1934, the livestock numbers had dropped to 300 head.

Part of the original area of use is now within the Death Valley National Monument. The DVNM lands constituted 50 percent of the area grazed when they were set aside in 1933. Litigation by the Park Service removed livestock use from the DVNM in 1964. At that time, the BLM permit was reduced from 300 head to 150 head to reflect the reduction in area of use and carrying capacity.

The boundaries of the Hunter Mountain Allotment are not fenced. This has allowed some cattle (15 to 20 at a time) to drift into the DVNM. A fence could be constructed along two miles of the boundary at a cost of $15,000 which would block cattle drift into the monument.

Hunter Mountain Allotment Area MAP 3-



The CDCA Plan identifies the total forage production for the allotment is 6,644 AUMs. Of this, about 1,500 AUMs are produced on the Hunter Mountain parcel. The current livestock forage allocation for the allotment is 1,105 AUMs. This allocation is for the entire allotment; there is no requirement that a certain portion of this be taken from any one area of the allotment. In other words, the permittee is not restricted as to how much use he can make in the portion of the allotment that is inside the Hunter Mountain parcel. The actual stocking rate for the parcel has varied greatly depending on prevailing weather conditions. The use in the Hunter Mountain parcel has been up to 450 AUMs in recent years.

Monitoring studies have been set up in the Hunter Mountain Allotment. Baseline studies such as exclosures, permanent transects, and photo points were established during 1986 and 1987. Utilization studies were initiated in 1986 and utilization mapping was accomplished in 1987. The utilization studies show less than 20 percent utilization over most of the allotment, including the Hunter Mountain parcel. This utilization level is well within the Desert Plan guidelines, which specify that utilization will not exceed 50 percent.

The condition of the allotment was rated as fair by the CDCA plan. That assessment was made prior to the removal of wild horses and burros from the allotment. At present, there is an upward trend in condition.

In 1898 and 1899, W. L. Hunter, in support of his grazing use, filed claims on the water rights for all springs and streams in the Hunter Mountain Area. A 1967 court decision upheld Mr. Hunter's claim to water rights there. These springs and streams are the only permanent water sources in the Hunter Mountain allotment. All are within the Hunter Mountain parcel (map 3-3). Water is currently piped from a spring development in Jackass Canyon through the Hunter Mountain pipeline to the Wilson Ranch on Lee Flat. This pipeline currently provides the only consistent water source on the Hunter Mountain Allotment outside of the Hunter Mountain parcel. Current plans (in the draft Hunter Mountain Allotment Management Plan) call for further development of this water source and extensions to the pipeline.

A draft allotment management plan (AMP) has been prepared for the Hunter Mountain Allotment. Under the AMP, several changes would be implemented in the Hunter Mountain parcel. These changes would include the following:

1. Changing the season of use on most of the parcel to summer
2. Setting initial stocking rates at 50 head
3. Excluding livestock from parts of lower Grapevine Canyon and Dodd Springs and fencing springs to protect them from cattle use.

The proposed management under the AMP is intended to enhance vegetation condition, reduce conflicts with deer, and exclude livestock from important parts of the bighorn sheep range.

Wild Horse and Burro

Wild horses and burros have accounted for most of the grazing use in the Hunter Mountain area in recent years, and are responsible for a majority of the adverse impacts caused by grazing animals. Capture data is incomplete; however, between 1978 and 1985, about 2,300 burros were removed from the Hunter Mountain grazing allotment. A portion of the burros removed spent at least part of their time in the Hunter Mountain parcel. The exact numbers and the percentage of time spent in the parcel are not available. Best estimates place the use in the allotment prior to burro removal at the equivalent of 1,000 to 1,500 burros on a year-around basis (8,400 to 12,600 AUMs).

Fewer than 15 horses still use the area around Spanish and Dead Horse Springs. About 10 burros still range in lower Grapevine Canyon and around Spanish Spring. Current management goals call for their removal.

The Lee Flat Herd Management Area is adjacent to the Hunter Mountain parcel. The burro use area includes Lee Flat and much of the surrounding area including parts of the Hunter Mountain parcel in upper Grapevine Canyon and Mill Canyon. The Desert Plan prescribes the maintenance of up to 30 head of burros in this herd management area.

Cultural Resources

Ethnographic documentation of the 1930s identifies Hunter Mountain as within one of three divisions of the Saline Valley district of the Western Shoshone. During interviews during the 1970s with Native Americans, contemporary use of Hunter Mountain was described as pinyon collecting and religious observance. The mountain has particular spiritual significance to the Native American community.

Prehistoric and historic cultural resources have been recorded on Hunter Mountain. These include 22 prehistoric sites, four prehistoric isolated artifacts, one historic site, and one site with both prehistoric and historic resources. Additional cultural resource sites are expected since less than 5 percent of the 26,687 acres of land proposed for transfer has been inventoried. All but one of the recorded prehistoric sites includes a lithic scatter, and 10 include no other resources. The remaining sites include flaked stone tools, ground stone artifacts or features, midden, rock shelters, stone alignments, or petroglyphs. One site consists entirely of petroglyphs. Activities represented by these resources include the manufacture of stone tools, processing of edible plants, hunting, and religious practices, with individual sites representing from one to all of these activities. The historic site consists of a variety of metal artifacts and fragments of glass, and suggests a brief camp. The other historic site includes features as well as artifacts associated with on-site residence and the processing of ore in the late-19th or early-20th century. The site also includes stone artifacts and milling features.

Lands

There are no private lands in this parcel. The public lands are classified by Multiple-use Classification R-1250, pursuant to the Classification and

Multiple Use Act of 1964. The act instructed the Secretary of the Interior to determine which of the public lands should be disposed of or retained. R-1250 is a multiple-use classification that identifies unappropriated public lands, segregated from appropriation only under the agricultural land laws and sale. Other forms of appropriation are allowed, as well as mineral leasing and location under the mining laws.

There is also a PWR #107. In the southern half of the area is an east-west dirt road which enters the Monument. The road is occasionally maintained by Inyo County and maybe claimed under RS 2477.

There are no authorizations of record nor are there any applications or proposals.

The parcel is within the Complex 3 of the R-2508 Military Operations Area. Military aircraft use of the area is authorized above 200 feet above ground level (AGL). A general discussion of the R-2508 area was presented for parcel one.

A four-mile-wide flight corridor (VR 1205/13) centered on Grapevine and Mill Canyons crosses the western edge of the parcel. It is used by formations of planes as well as individual aircraft.

The CDCA Plan designated the area as multiple use class C (proposed wilderness; 23,597 acres) and class L (limited use; 3,090 acres). The multiple use class boundaries are shown on map 3-6. There are no energy production or utility planning corridors in the area. The Inyo County Plan identifies this area as open spaces and multiple use.

Management Presence

BLM's staff visited the parcel relatively infrequently prior to the recent expansion of BLM's ranger force. A ranger was based in Big Pine, and patrolled the parcel once a week. Resource staff specialists (e.g. biologists, archaeologists, geologists) visit an area on an as-needed basis: for example, to process a right of way application or a mining plan of operation, or to prepare an ACEC management plan. Such visits have averaged about three per month. BLM's resources staffing is also being expanded at the present time.

The recent expansion of BLM's ranger force has changed this situation significantly. A ranger is now posted in Lone Pine. This ranger's patrol sector is smaller than the old Big Pine sector, and the ranger can visit the parcel three times each week.

Recreation

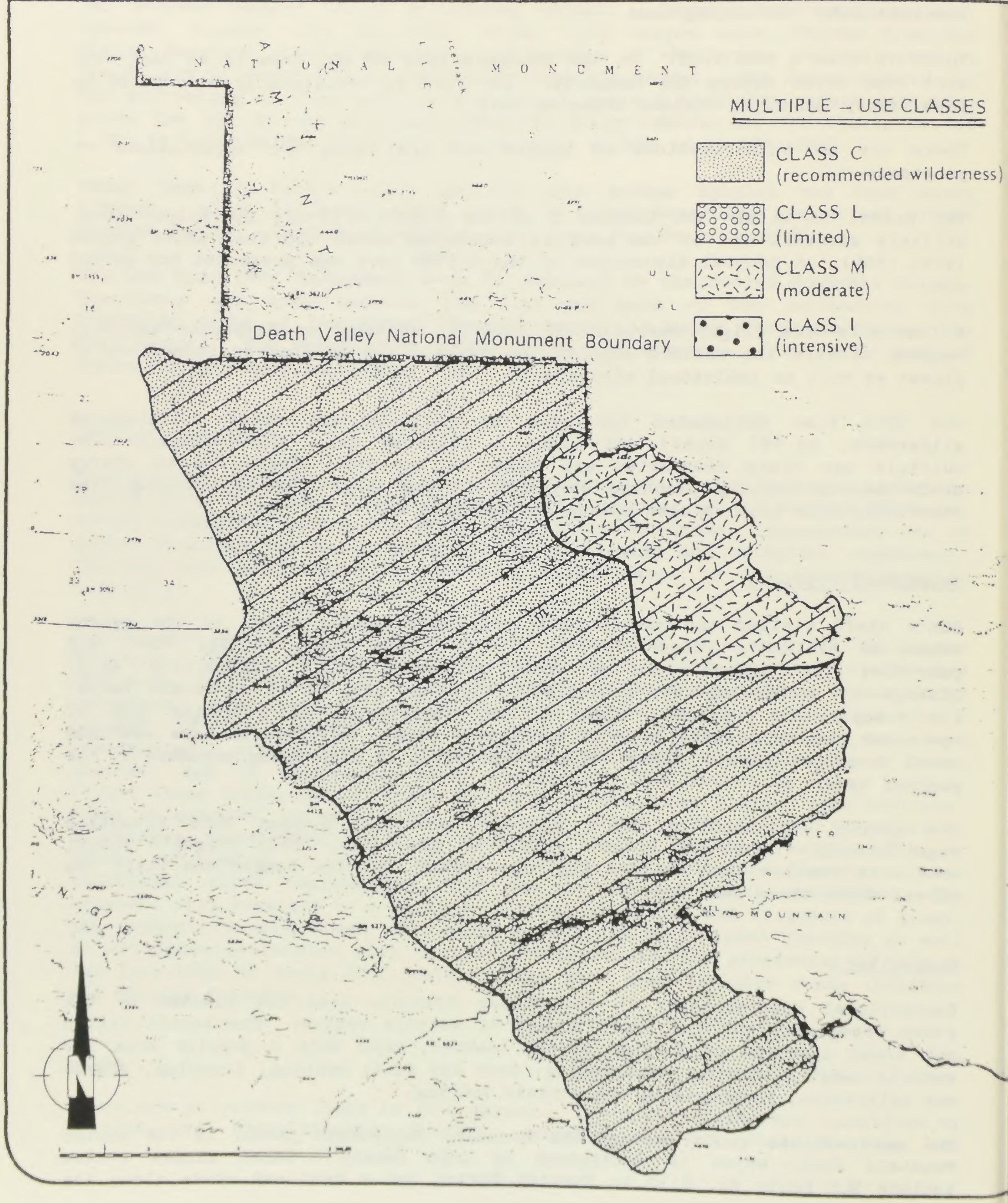
Recreational opportunities in the Hunter Mountain area are limited by the steep topography and the small number of vehicle routes. The scenic vistas and broad spectrum of terrain types, however, make this a popular area for vehicle camping, hiking, backpacking, deer and quail hunting, trapping, pinyon nut collection, rockhounding and vehicle touring.

The main vehicle route through the boundary adjustment parcel is the Hunter Mountain Road, which is maintained by Inyo County. Other access routes include BLM Route No. S112 to Spanish Spring and a dead end route along the

HUNTER MOUNTAIN

BLM - CDCA Plan Multiple-Use Class Map

MAP 3-6



BLM-NPS boundary in the northeastern portion of the parcel. A very primitive trail also exists from Saline Valley Road past Dodd Spring to the Lippencott Mine within Death Valley National Monument (currently washed out and only passable for hiking). Several small spur routes to primitive campsites exist off of the Hunter Mountain Road.

There are no open or closed areas within the parcel. All vehicle travel is required to stay on existing routes of travel.

Visitation is estimated at about 2,800 visitor days per year. The parcel is most popular among hunters each fall and also provides an area of higher elevation camping during the extreme temperatures found at the lower elevations of Saline Valley and Death Valley each summer.

Wilderness Study Areas

The parcel is entirely within portions of two BLM WSAs. A description of these WSAs and the BLM recommendations for wilderness suitability are as follows:

1. Hunter Mountain WSA (No. 123). About 80 percent of the WSA (23,787 acres) is within the boundary adjustment parcel. The WSA is bounded by DVNM on the north and east, the Hunter Mountain Road on the south and the Saline Valley Road on the west. Most of the WSA has been preliminarily recommended suitable for wilderness designation (CDCA Plan multiple use class C) due to outstanding natural conditions and opportunities for solitude and primitive and unconfined recreation. A 3,090 acre area around Spanish Spring (accessed by BLM Route No. S112) has been proposed to remain in class L. This area has been impacted by mining operations and a millsite, and is a popular destination for vehicle touring.

2. Panamint Dunes WSA (No. 127). A very small portion of the extreme northern portion of this large WSA is within the boundary adjustment parcel. The 2,900 acres of WSA within the parcel lies south of the Hunter Mountain Road, and has been preliminarily recommended as suitable for wilderness designation (CDCA Plan multiple use class C). The overall diversity of terrain, areas of tall, dense vegetation, outstanding opportunities for solitude and a lack of evidence of the works of man have all been listed as primary reasons for a suitable rating.

Geology-Energy-Minerals

The Hunter Mountain parcel is currently managed under a multiple use concept. Mineral exploration and extraction is governed under the Mining Law of 1872 (and amendments), the Mineral Leasing Act of 1920, the Mineral Materials Act of 1947 (as amended in 1955 by P.L. 167), the Geothermal Steam Act of 1970, the Federal Land and Policy Management Act of 1976 and the Interim Management Policy and Guidelines for Lands Under Wilderness Review. There is no private fee land within the parcel and no split-estate land (public surface, private subsurface). Federal land within the parcel is open to mineral location and entry under the Mining Law of 1872.

Geology

The following geologic description is taken from McKee and others (1984).

The rocks in the study area can be divided into four major groups: (1) Paleozoic marine sedimentary rocks; (2) Jurssic intrusive rocks; (3) upper Tertiary basalt flows; and (4) Quaternary surfical deposits.

The Paleozoic marine sedimentary rocks include strata of Late Cambrian to Mississipian age and have a composite stratigraphic thickness of more than 6,000 feet. At no place within the area, however, is more than a fraction of this thickness exposed. The rocks are predominantly dolomite and limestone with some interbedded quartzite units. In the Hunter Mountain area these coarbonate strata have been variously metamorphosed to marble or calc-silicate hormfels and the quartzose units are hormfelsic or phyllitic. A detailed description of the Paleozoic formations is given in McAllister (1956) and Conrad and McKee (1984).

The Jurassic plutonic rocks are part of the Hunter Mountain pluton, a composite granitoid body conisdered to be comagmatic with the Sierra Nevada batholith (Bateman and others, 1963; McKee and Nash, 1967: Ross, 1969). These granitic rocks intrude and have metamorphosed the Paleozoic sedimentary rocks of the area. The pluton generally has sharp and steep contacts with the surrounding country rock, and contact metamorphic effects extend as far as two miles from the contact. The Hunter Mountain pluton is mostly quartz monzonite in composition, but along border zones it may be composed of monzonite, syenodorite, diorite, and hornblende gabbro, caused by reaction with country rock (Hall, 1971). Locally, small intrusive bodies of aplite, leucogranite, pegmatite, and andesite porphyry cut the Hunter Mountain pluton and older stratified rocks.

A few outcrops of olivine basalt occur in the southern part of the area. These lavas are remnants of flows that have been offset by basin and range faulting and subsequently isolated by erosion. Widespread and voluminous basalt flows comprise most of the Saline Range a few miles north of the parcel and outliers of basalt are found throughout the northern Death Valley region. The basalts are late Miocene and Pliocene in age (Elliot and others, 1984).

Paleozoic strata in the study area are strongly folded and faulted. The intrusion of the Hunter Mountain pluton further complicated the structure by creating widespread, pervasive metamorphic features such as foliation, lineation, and recrystallization. Three major periods of deformation are recognized: (1) faulting and folding that took place prior to emplacement of the granatic rocks. These structures are recognized by regional geologic studies; (2) deformation assiciated with emplacement of plutonic rocks; and (3) basin and range high-angle normal faulting that is responsible for most of the physiography of the region.

Energy

The parcel has not been classified (USGS, Conservation Division, as amended by BLM, 1985) as prospectively valuable for oil, gas or geothermal resources. However, the BLM 'Saline Valley Geology-Energy- Mineral Resource Area data

(CDCA Plan, 1980) classified the northern three-fourths of the parcel as having a low potential for the occurrence of uranium and thorium based on geochemical data.

Minerals

Mining History and Exploration: The past mining history and production of the parcel are described in Causey and others (1983) and by McAllister (1955). In summary, the Ubehebe district (gold, lead, zinc, copper, tungsten, silver, wollastonite) includes the parcel and extends north about 10 miles. Recorded production of 5,625,501 pounds of lead, 347,649 pounds of zinc, 31,880 pounds of copper, 84,837 troy ounces silver and 303.4 troy ounces of gold is from four mines that are now within the borders of Death Valley National Monument (U.S. Bureau of Mines production records).

The Lippincott Mine, which adjoins the parcel, was one of the major lead-silver-zinc producers. McAllister (1955) states that the early history of prospecting and mineral development in the Lippincott area is obscure because the names of mining properties have been changed several times, recorded descriptions of the locations are vague and no claim notices dated prior to 1934 were seen at the claim monuments.

Leases and Mining Claims: A review of the BLM mining claim records (April 12, 1988 version) documents the existance of 25 unpatented lode claims, 36 association (160 acre) placer claims and 2 millsites. The majority of the lode claims are concentrated in the northeastern part of the parcel. The placer claims are grouped into two major concentrations in the eastern and south central part of the parcel.

Mineral Potential Overview: Mines and prospects within and adjacent to the parcel have produced gold, silver, lead, zinc, copper and wollastonite. A mineral potential map (map 3-7) shows areas of mineral potential and defines the high and moderate potential classifications.

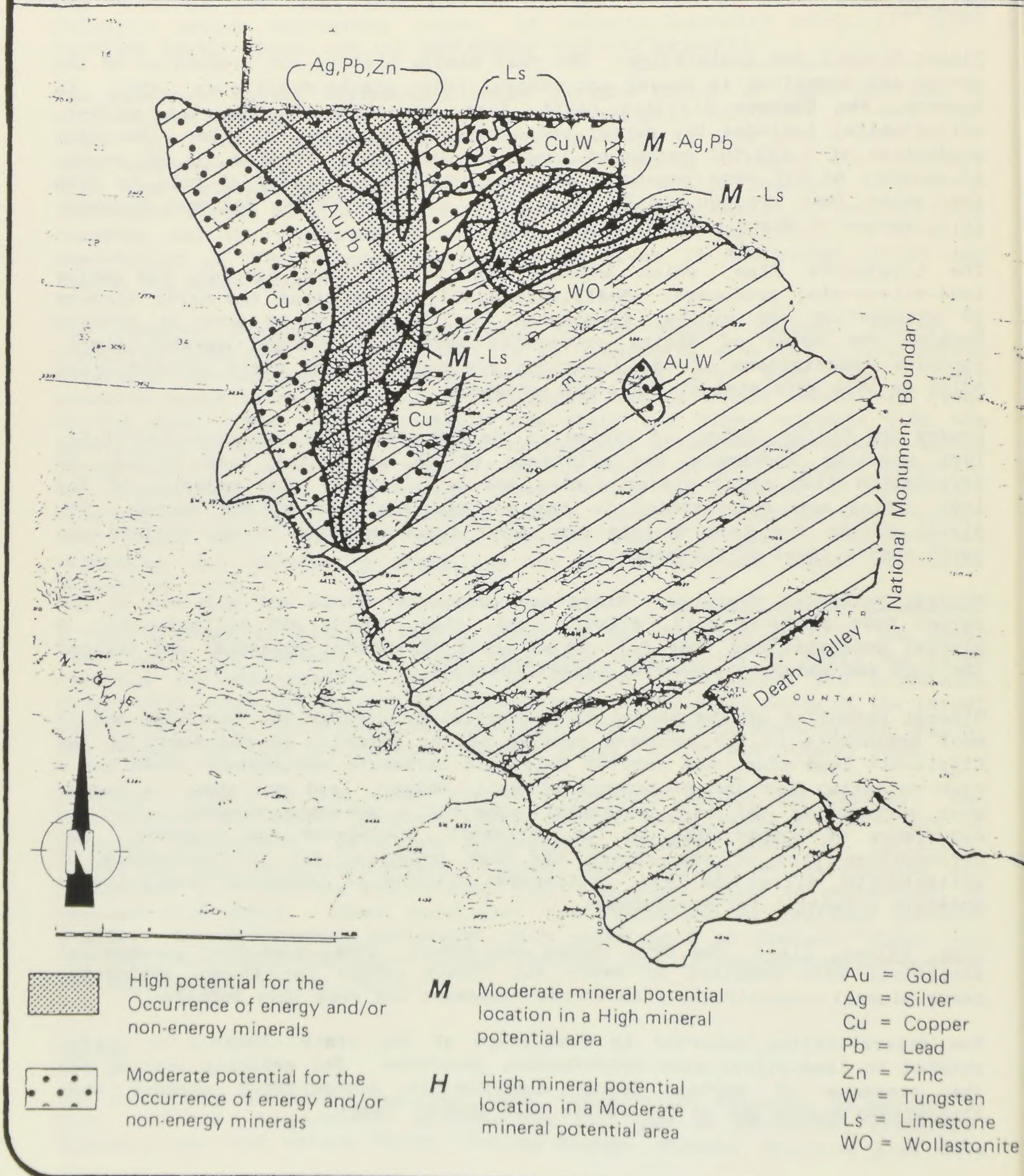
Mineral potential of the parcel is controlled by geology and structure and is most defineable in the northern portion of the parcel. To the south of the Lippincott lead mine, the zone of Paleozoic carbonate sedimentary rocks has a high potential for the occurrence of gold, silver, lead and zinc. A larger area surrounding the high potential zone has a moderate potential for the occurrence of copper and, in the northeast, molybdenum and tungsten. The northeastern part of the parcel has high potential for the occurrence of wollastonite, silver and lead. Widespread outcrops of limestone have a low to moderate potential for development.

Lead, Silver, Zinc: The USGS (McKee and others, 1984) presented geochemical analytical data compiled by Detra and others (1984) for stream sediments, heavy mineral concentrates from stream sediments and rock chip samples.

The mineralization detected by evaluation of the trace elements is mostly related to lead-silver-zinc hydrothermal processes. The geologic setting and the presence of certain heavy minerals in concentrates suggest that mineralized skarns may be present as well (McKee, 1984).

Hunter Mountain

Mineral Resources Potential MAP 3-


Ag,Pb,Zn
Ls
Cu,W
M -Ag,Pb
M -Ls
Au,Pb
Cu
WO
M -Ls
Au,W
Cu
National Monument Boundary
Death Valley
Canyon
N
High potential for the Occurrence of energy and/or non-energy minerals
Moderate potential for the Occurrence of energy and/or non-energy minerals
M Moderate mineral potential location in a High mineral potential area
H High mineral potential location in a Moderate mineral potential area
Au = Gold
Ag = Silver
Cu = Copper
Pb = Lead
Zn = Zinc
W = Tungsten
Ls = Limestone
WO = Wollastonite

The area to the immediate south of the Lippencott lead mine is classified as having a high potential for lead, silver, and zinc. A smaller area in the northeastern part of the parcel is classified as having a moderate potential for silver and lead (Taylor and Joseph, 1987). Taylor and Joseph also assigned a high potential classification for gold and lead to the band of Paleozoic sediments in the west-central part of the parcel.

Copper: McAllister (1955) noted that copper was the first metal in the region to attract the general attention of prospectors and miners near the turn of the 19th century. McAllister also describes most ot the copper deposits as small, associated with contact-metamorphic zones and containing very high grade ore.

The contact zones and surrounding intrusive rocks near the carbonate sedimentary sequences are classified as having a moderate potential for the occurrence of copper.

Tungsten: McAllister (1955) speculated on the outlook for future mineral deposits within the Ubehebe Peak quadrangle. McAllsiter states, "Tactite, which is favorable for the occurrence of scheelite (tungsten ore)... occurs widely in the Ubehebe Peak quadrangle, and moderately widespread traces of scheelite indicate that at least some tungsten here was in the mineralizers." The USGS (1984) classified the northeastern part of the parcel as having a low potential for the occurrence of tungsten, molybdenum, copper and silver in skarn and vein deposits. The USGS classification was upgraded to a moderate potential based on information and data supplied by the State of California, Division of Mines and Geology in 1985.

Wollastonite: The following status report of wollastonite is summarized from Clark (1980). "Wollastonite is a common mineral found in assemblages of moderately metamorphosed, lime-rich rocks. Although wollastonite itself is not rare, its occurrence in relatively large, pure masses is very unusual. According to available literature, only a few rich deposits are known throughout the world. Production of commercial grade material has been developed from ore bodies near ... the Hunter Mountain area...".

Clark states that upwards to 200 million tons or more for the entire wollastonite rock mass is inferred from surface exposures. Specific estimates (based on surface exposures) of the west end resource range upward to 25 million ton of 65 to 85 percent pure wollastonite.

A confidential report prepared by Moore and Tabor (1985) presented an analysis of the J.O. property located in the parcel. Total volume of all categories (measured, indicated and inferred) of reserves was estimated to be 18,000,000 tons (or more) of ore containing an average of 60 percent wollastonite. In 1985, 43 exploration holes were drilled on the J.O. property by Nor Con Industries. The data has not been released to the public.

Interspace Corporation, the principal producer of Wollastonite in the United States, may mine this deposit in the future since current deposits in New York state are being depleted (California Division of Mines and Geology (CDMG), 1985).

Limestone: Carbonate rock is present in small (less than several thousand feet long) to large (more than several miles long) masses consisting of limestone, dolomite and marble of various composition. Only minor historic prodiction has been recorded within the parcel area; however, age- and composition-equivalent rocks have been extensively mined elsewhere in the desert region. These units could represent important resources of carbonate rock suitable for a number of industrial uses (Taylor and Joseph, 1987). Based on a developmental likelihood, the parcel has a low to moderate potential for the occurrence of limestone deposits.

PARCEL THREE: PYRAMID PEAK

Wildlife

Wildlife habitat throughout the area is predominantly a creosotebush scrub composed mainly of shrubs. The major dominant species of this vegetation is creosotebush (*Larrea tridentata*). Dominance is often shared with burrobush (*Ambrosia dumosa*) and occasionally with cheesebush (*Hymenoclea salsola*), brittlebush (*Encelia farinosa*) and saltbush (*Atriplex* sp.). Grasses may be present but generally comprise a very small percentage of vegetation components.

The broad dry valleys, rugged rocky mountains, and sandy washes support a wide variety of wildlife species. Common reptiles in the area include side-blotched lizards, whiptails, zebra-tailed lizards, spiny lizards, gopher snakes, speckled rattlesnakes, and sidewinder rattlesnakes. Indigenous mammals include antelope ground squirrel, Merriam's kangaroo rat, desert wood rat, coyote, kit fox, badger, and black-tailed jack rabbit. Although hundreds of species of birds may utilize various habitats at some time during the year, those most often observed include mourning dove, horned lark, house finch, black-throated sparrow, turkey vulture, red-tailed hawk, road runner, loggerhead shrike, and common raven. While the sensitive Amargosa River pupfish and Nevada speckled dace inhabit the Amargosa River, it is not believed that flows in the parcel are sufficient to support these fish species.

Although there are doubtless golden eagle, prairie falcon, and other raptor nests and aeries throughout the region, none are documented in the project area.

The springs identified under "water" are not documented as to quantity or reliability as water sources. Nonetheless, any water source in the desert must be considered extremely important to wildlife, even if it is only intermittent.

Significant Species

There are no documented federally listed threatened or endangered wildlife species in this area.

Desert Bighorn: In the Funeral Mountains, which include Pyramid Peak, the BLM currently manages about 12 percent of the bighorn sheep habitat and Death Valley National Monument manages 85 percent of the bighorn habitat (Cooperrider, 1988). The remaining three percent of the habitat is private and state owned property. A bighorn guzzler has been built one mile NE of Pyramid Peak in a cooperative effort between the BLM and the California Department of Fish and Game (CDFG) (BLM, 1986). This guzzler is currently receiving low use. The bighorn populations in the Funeral Mountains have steadily declined from 145 bighorn in 1961 (Wells, R.E. and F.B. 1961) to 60 bighorn in 1972 (Weaver, R. 1972), and to the current (1987) estimate of 35 bighorn (Weaver, R. 1987). These declines parallel bighorn populations declines in DVNM as a whole, those being 900 bighorn in 1961 (Wells, R.E. and F.B. 1961), 600 bighorn in 1972 (Weaver, R.A. 1972), and 404 bighorn in 1987 (Weaver, R.A. 1987). The trend can be expected to continue. Virtually all of the land in the parcel is permanent bighorn range.

Botany

The Pyramid Peak parcel contains no known state or federally listed plants or their defined critical habitat, nor is it known to have present any candidate or BLM sensitive plant species. To the southwest of the parcel within DVNM are three species that have the potential of occurring within the Pyramid Peak parcel. These are desert bear-poppy (Arctomecon merriamii), Hoffman's robust buckwheat (Eriogonum hoffmannii var. robustius), and Death Valley sandpaper plant (Petalonyx thurberi ssp. gilmanii). Both the desert bear poppy and Hoffman's robust buckwheet are Category 3c on the U.S. Fish and Wildlife Service list of plant taxa under review for listing. Category 3c indicates that the species is more abundant or widespread than previously thought or not subject to any identifiable threat.

The Death Valley Sandpaper plant is a Category 2 plant on the U.S. Fish and Wildlife Service list. Category 2 plants are those that are appropriate to propose for listing as threatened or endangered, but substantial data is needed to support listing. Of the three species only the Death Valley Sandpaper plant appears on the California BLM State Director's list of sensitive plants.

No other unique or unusual botanical resources are known to occur in this area.

Livestock Grazing

The CDCA Plan did not designate Livestock Grazing Allotments in this area.

Wild Horse and Burro

The CDCA Plan did not designate herd management areas for wild horses or burros in this area.

Cultural Resources

Less than 1 percent of the Pyramid Peak and Greenwater Valley parcels have been inventoried for cultural resources (BLM 1980). Thus, the specific data presented below is incomplete. It is also impossible with the existing data to statistically estimate archaeological site density and distribution within the parcels. However, the following generalizations are valid for this area (BLM 1979; 1980).

1. Prehistoric archaeological sites will be found in association with water sources. Areas within 1/2 mile of springs and seeps will have a high probability of containing habitation, hunting, and plant processing sites;

2. Prehistoric archaeological sites will be found on desert pavement surfaces. These sites will include lithic scatters, rock rings, sleeping circles, and geoglyphs. Sites in desert pavements will be examples of the earliest sites in the desert.

3. Prehistoric archaeological sites will be found in areas characterized by cryptocrystalline source rocks suitable for lithic tool manufacture. These sites will tend to be quarry sites and large primary reduction lithic scatters.

4. Prehistoric rock art sites will be found in dark basaltic cliff faces and boulder fields, especially at the entrances to passes through mountain ranges separating major valleys.

5. Areas not characterized above, especially large alluvial fans without desert pavement or lithic source materials, will have very low site densities.

Parcel-Specific Information

Archaeological resources are threatened by natural erosional and depositional processes and by surface-disturbing human activities. In the Pyramid Peak parcel these activities include limited off-highway vehicle free-play in the Red Amphitheater area and in the extreme southeastern corner of the parcel (near State highway 190), non-motorized recreation, and occasional mining and illicit collecting.

There are two prehistoric archaeological sites recorded within parcel three. CA-INY-2355 consists of a rockshelter in volcanic breccia, within the Red Amphitheater area. In 1977 the shelter was recorded as containing grinding tools, obsidian and chert lithic debris, and burnt bone. The presence of burnt bone suggests the possibility of a midden deposit in the shelter. There are numerous similar rock grottos in this area and thus a high probability of finding numerous similar sites. The second site, CA-INY-1533, was recorded in 1966 as consisting of 7 house pits with associated lithic debris and crude chopper tools.

Neither of these sites has been relocated since recordation and their current status is unknown.

Lands

Of the 14,268 total acres, about 90 percent (12,844 acres) are public lands administered by BLM. About 1184 acres (8.3 percent) are owned by the State of California, and 240 acres (1.7 percent) are privately owned.

The title plats indicate that the majority of public lands are unsurveyed, although there is a record of prior survey work. The State grants (Sections

16 and 36, T.26N., R.3E., SBM) and the U.S. Borax "Travertine Point" mineral entry patent 1099023 (SE1/4SE1/4, Section 17; NE1/4NE1/4, Section 20; and N1/2NW1/4, Section 21), conveyed in 1938, were based on the 1857 cadastral survey. A 1940 independent resurvey moved the township one mile to the north. The 1857 survey was cancelled in December 1943. The 1940 independent resurvey was approved in 1942 (although the master title plat--mistakenly--continues to indicate unsurveyed public lands).

All public lands in the Pyramid Peak Parcel are affected by BLM Order of Classification R-1250 (August 22, 1968) pursuant to the Classification and Multiple Use Act of 1964.

The south parcel boundary is formed by State Highway 190, a 400 foot wide right-of-way authorized on April 25, 1940 by Grant S-031950 pursuant to the Federal Highway act of November 9, 1921. There are no other interior rights-of-way or other surface authorizations. There are no claimed or maintained Inyo County roads within the Pyramid Peak Parcel.

There are two pending actions that involve lands within the parcel:

> Under the February 10, 1986 National Wildlife Federation (NWF) related preliminary injunction order, multiple-use classification R-1250 cannot be revoked and no action can be taken that is inconsistent with the specific terms of the classification. The preliminary injunction order applies to all Bureaus within the Department of the Interior.
>
> In June 1987, U.S. Borax submitted a land exchange proposal to BLM/NPS, wherein the surface estate of certain lands within Death Valley National Monument would be deeded to the United States in exchange for the surface estate of public lands in the Ryan area. A component of the overall proposal is to relocate, by exchange, the U.S. Borax Travertine Point patented lands one mile to the south, their originally intended position per the 1857 survey.

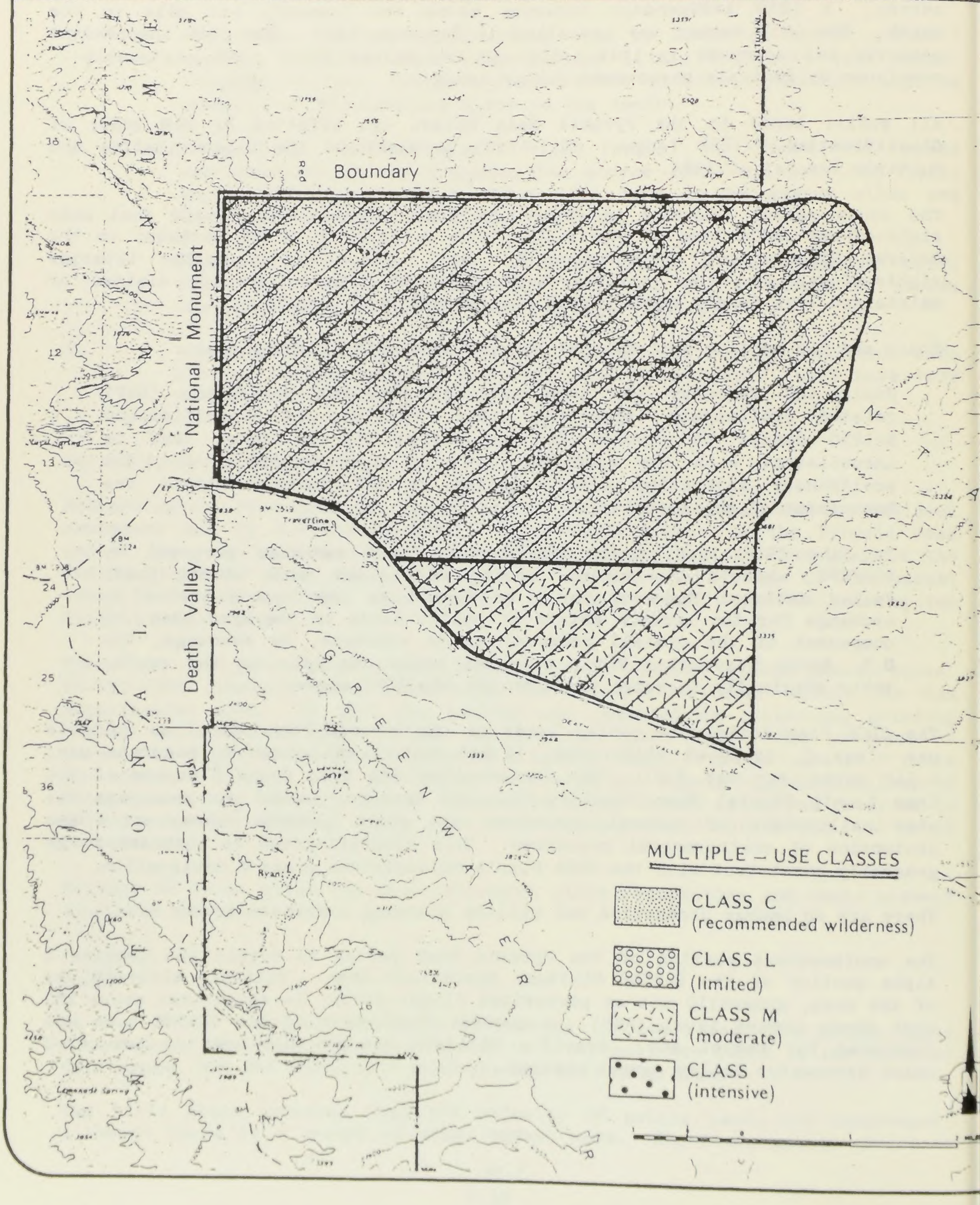
The CDCA Plan designated public lands in the Pyramid Peak parcel as multiple use class C (proposed wilderness; 11,956 acres) and class M (moderate use; 2,312 acres)(see map 3-8). The Conservation and Open Space Elements of the Inyo County General Plan identify "Natural Resource Lands" to encourage the wise utilization of natural resources and still promote conservation and protection of environmental resources. This classification is intended to be generally consistent with the CDCA Plan's multiple-use class M designation.

There are no energy production and utility planning corridors in the area.

The southwestern portion of the Pyramid Peak parcel is within the Complex 4 Alpha portion of the R-2508 Military Operations Area. Military aircraft use of the area, generally not on prescribed flight paths, is authorized above 200 feet above ground level (AGL). A general discussion of the R-2508 area was presented for parcel one. Specific military use of this area is described under Greenwater Valley parcel (below).

PYRAMID PEAK

BLM - CDCA Plan Multiple-Use Class Map MAP 3-



Management Presence

BLM's staff visited the parcel relatively infrequently prior to the recent expansion of BLM's ranger force. A ranger was based in Barstow, 200 miles away, and patrolled the parcel once every two weeks. Resource staff specialists (e.g. biologists, archaeologists, geologists) visit an area on an as-needed basis: for example, to process a right of way application or a mining plan of operation, or to prepare an ACEC management plan. Such visits have averaged about once per month. BLM's resources staffing is also being expanded at the present time.

The recent expansion of BLM's ranger force has changed this situation significantly. A ranger is now posted in nearby Shoshone. This ranger's patrol sector is smaller than the old sector, and the ranger can visit the parcel three to four times each week.

Wilderness

The parcel is entirely within the Funeral Mountains Wilderness Study Area. About 84 percent of the parcel, 11,956 acres, is recommended as suitable for wilderness designation by BLM. This area contains exemplary landscapes, including the rugged and colorful banding of dolomite and limestone rock along the southern extension of the Funeral Mountains, the picturesque Pyramid Peak which rises to nearly 7,000 feet, and the geologically-enclosed colorful valley called Red Amphitheater. Man-made intrusions have been excluded, leaving pristine rugged canyons and craggy peaks. Due to the ruggedness and complexity of the canyons and peaks, outstanding opportunities for solitude are available. The terrain lends itself to unique opportunities for primitive and unconfined types of recreation, including backpacking, mountain and rock climbing, day hiking, and nature studies. Additional opportunities for extended desert backpacking experiences are afforded by the contiguous administratively endorsed wilderness in Death Valley National Monument.

The 2,312 acres that are recommended as non-suitable include a bajada along the southern slope of Pyramid Peak. This area contains high mineral potential for sand and gravel and medium potential for borates.

Recreation

The Pyramid Peak parcel primarily serves as a spectacular scenic backdrop to motorists entering Death Valley National Monument via State Route 190. The precipitous terrain of most portions of the parcel virtually excludes those types of vehicle dependent recreation activities. The only route of travel within this parcel is a one-mile segment in the drainage of Red Amphitheater. Although potentials are good for primitive types of recreation, existing use levels are low. Desert hikers consider the ascent of Pyramid Peak a considerable challenge. The long-term potential for recreational hunting of trophy desert bighorn sheep in the area is good.

Geology - Energy - Minerals

Energy

The parcel has low potential for the occurrence of geothermal, oil and gas, and sodium resources.

Minerals

Mining History and Exploration: Bentonite was prospected at an unknown time on a placer claim in the eastern part of the parcel (SE1/4 Sec. 18, T.26N., R.4E.). No plans of operations for exploration or mining have been received for this parcel since regulations were issued in 1980. The parcel is open to mineral entry except for about 1,180 acres of State land and about 240 acres of private lands.

Leases and Mining Claims: There are no mineral leases on parcel three. There is one unpatented mining claim and one mill site claim in the study area. These are located in the eastern portion of the parcel. A 160-acre patented mining claim is located in the western part of the area. There is no recorded mineral production from this property, which is owned by U.S. Borax.

Mineral Potential Overview: Most of parcel three has moderate to high potential for the occurrence of mineral resources (see map 3-9).

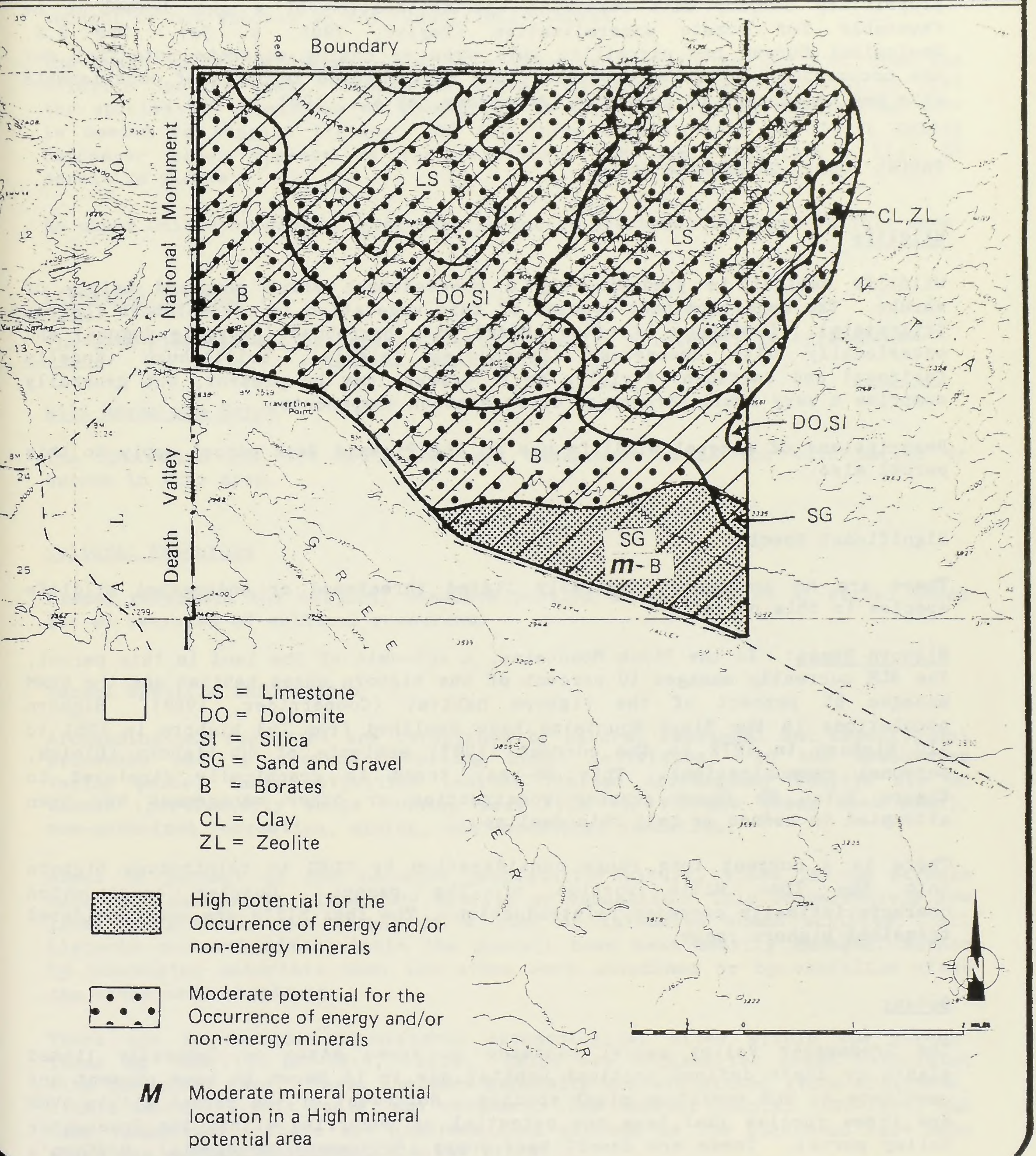
Sand and Gravel: About $2^1/_2$ square miles in the southern part of the parcel have high potential for the occurrence of sand and gravel. This is based on the similarity of these deposits to a past extraction site $5^1/_2$ miles to the southeast where Caltrans has removed about 30,000 cubic yards of aggregate for the maintenance of Highway 190.

Bentonite and Zeolite: About $1^2/_3$ square miles in the northeast part of the parcel has moderate potential for the occurrence of clay (bentonite) and zeolite. This area is underlain by Tertiary-age tuffaceous sedimentary rocks which contain concentrations of bentonitic clay and minor zeolites. Currently, bentonite is being produced at the Sidehill Mine, five miles to the east (Taylor, 1986, p. 32).

Limestone: About eight square miles in the northern and north-central part of Parcel Three has moderate potential for the occurrence of limestone. These areas contain carbonate rock that is predominantly limestone of Devonian to Mesozoic age. Although there has been no production from this area, these formations or similar-age formations have recorded production elsewhere in the Mojave Desert and, as a consequence, could contain important resources of carbonate rock (Taylor, 1986, p. 33).

Dolomite and Silica: About $4^1/_2$ square miles in the central to north-central part of the parcel have moderate potential for the occurrence of dolomite and silica (quartzite). This area contains carbonate rock that is predominantly dolomite of Precambrian to Silurian age. Carbonate rocks of equivalent ages have produced dolomite in other areas of California and, as a consequence, this area could contain resources (Taylor, 1986, p. 33) as shown in California Division of Mines and Geology Bulletin 194 (Bowen, et al., 1973).

Pyramid Peak Mineral Resources Potential MAP 3-9



Boundary
Red
Amphitheater
Death Valley National Monument
Travertine Point
LS
LS
DO,SI
B
B
CL,ZL
DO,SI
SG
SG
m-B
N
LS = Limestone
DO = Dolomite
SI = Silica
SG = Sand and Gravel
B = Borates
CL = Clay
ZL = Zeolite
High potential for the Occurrence of energy and/or non-energy minerals
Moderate potential for the Occurrence of energy and/or non-energy minerals
M Moderate mineral potential location in a High mineral potential area

Boron (Borates): About three square miles in the western and southern part of the parcel have moderate potential for the occurrence of borate. This area is within a broad zone which encompasses several areas known to contain identified borate reserves, and represents a synthesis of both published and proprietary company data regarding the delineation of a zone deemed to be favorable for borate mineralization (Taylor, 1986, p. 34). The U.S. Geological Survey has classified this area as having moderate potential for the occurrence of borate resources since undiscovered deposits of considerable size may be present in this area (Armstrong, et al., 1987, p. A9).

PARCEL FOUR: GREENWATER VALLEY

Wildlife

Wildlife habitat is predominantly a creosotebush scrub composed mainly of shrubs. The major dominant species of this vegetation is creosotebush (Larrea tridentata). Dominance is often shared with burrobush (Ambrosia dumosa) and occasionally with cheesebush (Hymenoclea salsola), brittlebush (Encelia farinosa) and saltbush (Atriplex sp.) Grasses may be present, but generally comprise a very small percentage of vegetation components.

Descriptions of general wildlife use in the Pyramid Peak parcel apply to this parcel also.

Significant Species

There are no documented federally listed threatened or endangered wildlife species in this parcel.

Bighorn Sheep: In the Black Mountains, a sub-unit of the land in this parcel, the BLM currently manages 10 percent of the bighorn sheep habitat and the DVNM manages 85 percent of the bighorn habitat (Cooperrider, 1988). Bighorn populations in the Black Mountains have declined from 163 bighorn in 1961 to 110 bighorn in 1972 to the current (1987) estimate of 60 bighorn (Bleich, personal communication). This 26-year trend is graphically displayed in figure 3-1. No known guzzler construction or other management has been attempted to reduce or halt this decline.

There is a current long range consideration by CDFG to reintroduce bighorn into the Ibex Hills portion of the parcel. Guzzler construction characteristically precedes reintroduction. The Ibex hills are now considered transient bighorn range.

Botany

The Greenwater Valley parcel contains no known state or federally listed plants or their defined critical habitat nor is it known to have present any candidate or BLM sensitive plant species. Northwest of the parcel within DVNM are three species that have the potential of occurring within the Greenwater Valley parcel. These are desert bear-poppy (Arctomecon merriamii), Hoffman's robust buckwheat (Eriogonum hoffmannii var. robustius), and Death Valley sandpaper plant (Petalonyx thurberi ssp. gilmanii). Both the desert bear poppy and Hoffman's robust buckwheat are Category 3c on the U.S. Fish and Wildlife Service list of plant taxa under review for listing. Category 3c indicates that the species is more abundant or widespread than previously thought or not subject to any identifiable threat.

The Death Valley sandpaper plant is a Category 2 plant on the U.S. Fish and Wildlife Service list. Category 2 plants are those, that proposing to list the species as threatened or endangered is appropriate, but substantial data is needed to support listing. Of the three species only the Death Valley Sandpaper plant appears on the California BLM State Director's list of sensitive plants.

No other unique or unusual botanical resources are known to occur in this area.

Livestock Grazing

The CDCA Plan did not designate Livestock Grazing Allotments in this area.

Wild Horse and Burro

The CDCA Plan did not designate herd management areas for wild horses or burros in this area.

Cultural Resources

Please reference the cultural resource portion of Alternative A: Parcel Three for an overview of cultural resources.

Parcel Specific Information

Archaeological resources are threatened by natural erosional and depositional processes and by surface-disturbing human activities. In the Greenwater Valley parcel these activities include limited off-highway vehicle use of washes (particularly those running west from the Furnace Creek Wash Road), non-motorized recreation, mining, and occasional vandalism.

About 20 percent of the recorded prehistoric cultural sites in the parcels have been damaged by either OHV traffic or vandalism. This comparatively low level is probably the result of a lack of intensive human activity. All historic cultural sites within the parcels have been heavily damaged, either by scavenging materials when the sites were abandoned or by vandalism after the sites were abandoned.

There are 10 recorded prehistoric archaeological sites within the parcel. Three of them (CA-INY-1813, -1814, -1815) are rockshelter areas associated with Sheephead Pass. These shelters generally contain ground stone artifacts, lithic debris, lithic tools, and ceramics. One shelter complex (INY-1815) had been vandalized. There are numerous rock grottos in the Sheephead Pass area which may contain additional similar sites.

Five of the remaining seven sites (CA-INY-2361 through -2365) are small lithic scatters associated with the Calico Hills. These sites contain chalcedony cores, flakes, and tools and are located on desert pavement surfaces characterized by float chalcedony nodules. These sites represent lithic assay and quarry activities. Additional similar sites will be found on most desert pavement in the area east of the Calico Hills.

CA-INY-2368 was recorded as a rockshelter in the Calico Hills characterized by grinding slicks, lithic debris, a hearth, and possible midden. There are numerous rock grottos in the area around INY-2368 which may contain additional sites.

The final site (CA-INY-2372) is recorded as a geoglyph on a desert pavement surface on the floor of Greenwater Canyon. The geoglyph consists of a series of straight and wavy lines and a zoomorph. The designs have been disturbed by OHV activity.

Historic cultural resources in the parcel are associated with mining activities from the early 1900s (Chalfant 1933). The most famous of these sites is the Greenwater Mining District (Vredenburgh, et. al. 1981). In late 1904, the discovery of apparently rich copper deposits near Greenwater Spring sparked one of the most intensive mining speculation booms in the history of western mining (Paher 1973). During the 4 year boom, 2,500 claims were filed and shafts up to 1,400 feet deep were dug. The town of Greenwater contained at least 1,000 people who enjoyed telephone service, a bank, post office and two newspapers. By the time the boom collapsed, $140,000,000 worth of mining stock had been sold to the public. Unfortunately all of this intense activity resulted in only 20 tons of copper shipped from Greenwater (Armstrong, et. al. 1987; Taylor 1986).

When Greenwater was abandoned in late 1907, its buildings were dismantled and shipped to other boomtowns (Paher 1973). Since then this site has been virtually destroyed by vandalism and almost nothing remains today, except a moonscape of illegal excavations. Most of the historic properties in the Greenwater Mining District located within the monument and the remainder of the District are shafts, adits, and tailing piles located between the monument boundary and the Greenwater site.

Lands

Over 95 percent of the total acreage is public lands administered by BLM. About 5,100 acres (4.3 percent) are owned by the State of California. These are the Section 16 and 36 grants in each township. Mineral entry patents, conveyed between 1896 and 1926, account for the approximately 500 acres (0.4 percent) in private ownership. About 380 acres of contiguous private holdings are located in the northern portion of this parcel (Sections 27, 34 and 35, T.24N., R.3E., SBM). The remaining private acreage consists of three isolated patented claims in the southern area.

All public lands in the Greenwater Valley parcel are affected by multiple use classification R-1250, as previously described in Alternative A: Parcel Two. Those portions of Sections 8 and 17, T.22N., R.5E., SBM within the parcel are withdrawn as PWR 13 by Executive Order of December 1, 1913. Lands within the

PWR are withdrawn from agricultural settlement and entry and from non-metalliferous mineral entry. The lands are open to mineral leasing, mineral material sales and metalliferous mineral entry. A withdrawal review field report, under Section 204 FLPMA, recommends revocation of the PWR withdrawal because there is no surface water. Under the NWF-related preliminary injunction (discussed in Alternative A: Parcel Three), action on the withdrawal review case is suspended.

Most of the eastern parcel boundary is formed by the Furnace Creek Wash Road (Inyo County Road No. 5005). A five mile southeast boundary segment is State Highway 127. These public roadways, as well as the interior roads described below, were established by use and/or construction under the principles of Revised Statue 2477 (formerly 43 U.S.C. 932). Generally, the right-of-way width is the width under State law at the time of road establishment, or the maintained roadway width. Public roadways in the interior of the parcel (map 2-4) include State Highway 178 and the "Lost Section Road" and connector (Inyo County Roads 5010 and 5010A).

Other interior surface rights of record, concentrated in the parcel's southeast area, are identified below:

> Material Site rights-of-way LA-0164240 (November 24, 1959) and R-1483 (April 17, 1967) within Section 28, T.20N., R.6E., SBM; authorized pursuant to the Act of August 27, 1958 (23 U.S.C. 317); no expiration date.
>
> Electric distribution pole line rights-of-way R-01247 (June 9, 1965) and R-316 (March 16, 1967) to the Eclipse Mine within Sections 7 and 18, T.20N., R.6E., SBM; authorized pursuant to the Act of March 4, 1911, as amended (43 U.S.C. 961); 50 year grant terms renewable.
>
> Electric distribution pole line right-of-way R-06979 (November 17, 1966) which roughly parallels the west side of State Highway 127; authorized pursuant to the Act of March 4, 1911, as amended.

Section 36, T.22$^1/_2$N., R.4E., SBM was involved in BLM-State of California land exchange CA-15867 (September 9, 1984). As part of 51,909 acres of offered lands, the State of California conveyed this unsurveyed section (part of the State's land entitlement as a condition of Statehood) to the United States. There are no pending lands actions.

The Greenwater Valley parcel is entirely within the Complex 4 Alpha portion of the R-2508 Military Operations Area. Military aircraft use of the area, generally not on prescribed flight paths, is authorized above 200 feet AGL. A general discussion of the R-2508 area was presented for parcel one.

No low-level routes cross the area. However, it is extensively used as a maneuver and training area, particularly by George Air Force Base. That base typically conducts 35 to 50 sorties per day in the area, most at elevations of about 500 feet AGL. It is also used by Marine Corps KC130's at 1,500 feet AGL on their way to the Nellis Range Complex.

The CDCA Plan designated the area as multiple use class C (proposed wilderness; 23,440 acres), class L (limited use; 39,691 acres), class M

(34,728 acres) and class I (intensive use; 19,646 acres)(see map 3-10). The Inyo County General Plan classified the parcel as "Natural Resource Lands", a classification intended to be generally consistent with the CDCA Plan's multiple-use class M. There are no energy production and utility corridors in the area.

Management Presence

BLM's staff visited the parcel relatively infrequently prior to the recent expansion of BLM's ranger force. A ranger was based in Barstow, 200 miles away, and patrolled the parcel once every two weeks. Resource staff specialists (e.g. biologists, archaeologists, geologists) visit an area on an as-needed basis: for example, to process a right of way application or a mining plan of operation, or to prepare an ACEC management plan. Such visits have averaged about once per month. BLM's resources staffing is also being expanded at the present time.

The recent expansion of BLM's ranger force has changed this situation significantly. A ranger is now posted in nearby Shoshone. This ranger's patrol sector is smaller than the old sector, and the ranger can visit the parcel three to four times each week.

Wilderness

About 85 percent of the parcel is located within the Greenwater Valley and Ibex Hills WSAs. Greenwater Valley WSA is located north of State Route 178 and its boundaries are identical to the portion of Parcel Four that is north of State Route 178. The Ibex Hills WSA is located south of State Route 178, and is partly within the parcel. The remaining 15 percent of the parcel was eliminated from wilderness study by BLM because of existing impacts to naturalness.

BLM has recommended 23,440 acres (20 percent) of the parcel as suitable for wilderness designation. This area is located in the south-central portion of the parcel, within the Greenwater Valley WSA. It posseses an outstanding wilderness character that exemplifies the criteria stated in Section 2(c) of the Wilderness Act of 1964.

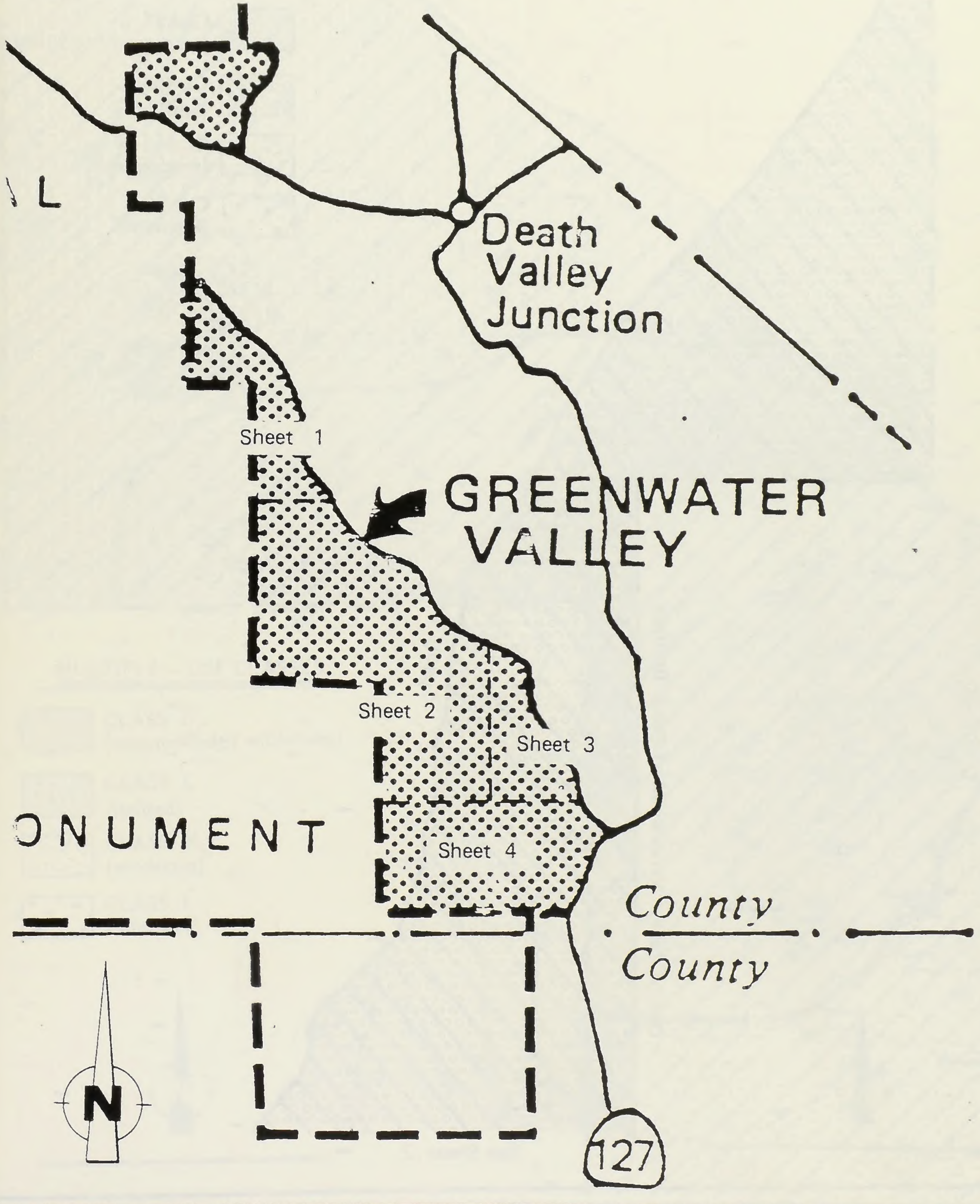
The 1980 CDCA Plan originally recommended 52,810 acres of parcel four (Greenwater Valley WSA) as suitable for wilderness designation. However, in 1982, Inyo County Board of Supervisors submitted a proposal to amend the CDCA Plan and reduce the suitable portion to 23,440 acres. The amendment was approved. A county claimed road had inadvertently been included within the area originally recommended as suitable for wilderness.

The entire Ibex Hills WSA (located south of State Route 178) was recommended nonsuitable for wilderness designation in the 1980 CDCA Plan because of high mineral potential and existing impacts to naturalness. Several past producing mines are located within the WSA.

Upon release from wilderness consideration, the nonsuitable portions of both WSAs will be managed for multiple uses other than wilderness.

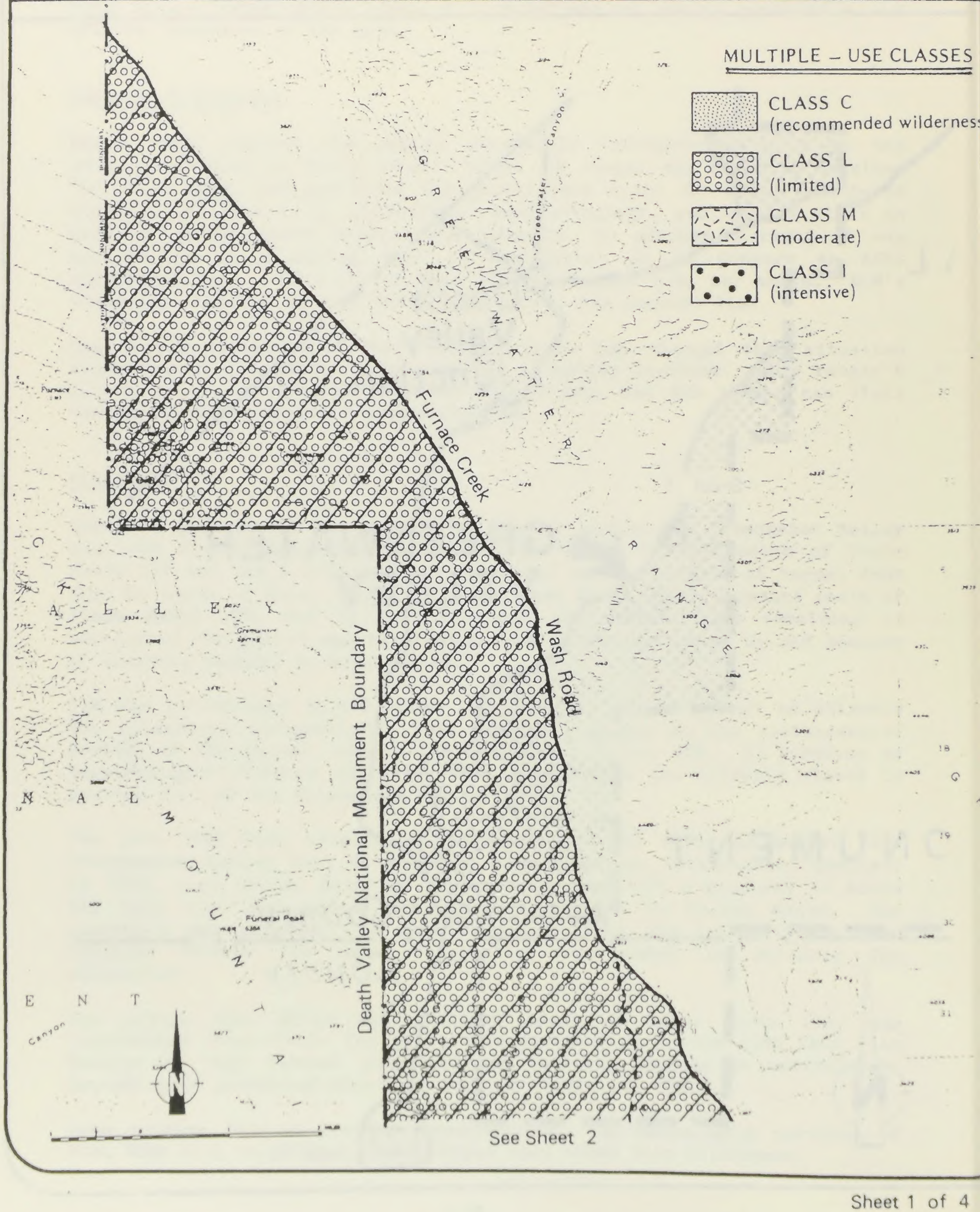
Greenwater Valley Index

BLM - CDCA Plan Multiple-Use Class Map MAP 3-10



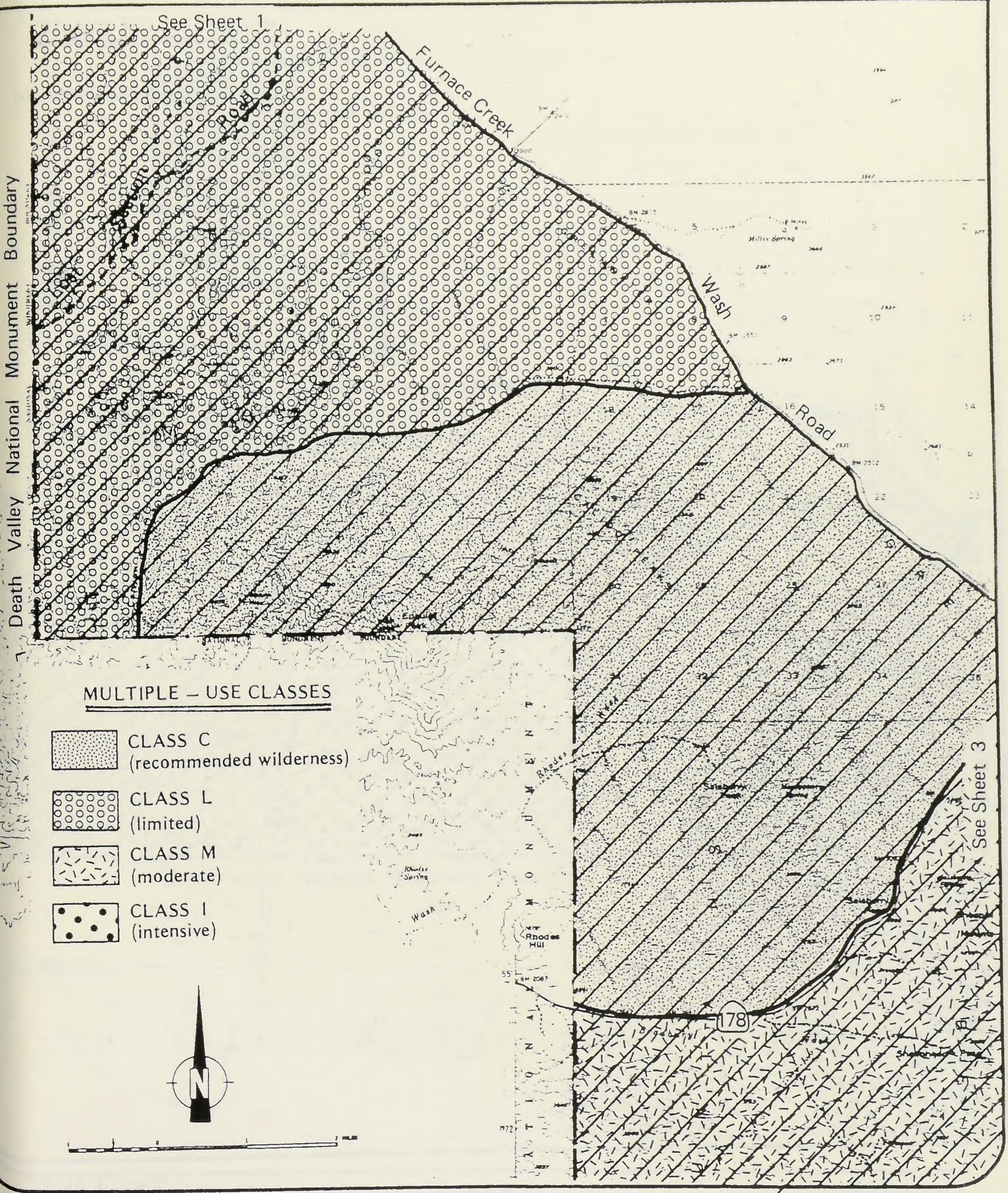
Greenwater Valley

BLM - CDCA Plan Multiple-Use Class Map 3-10



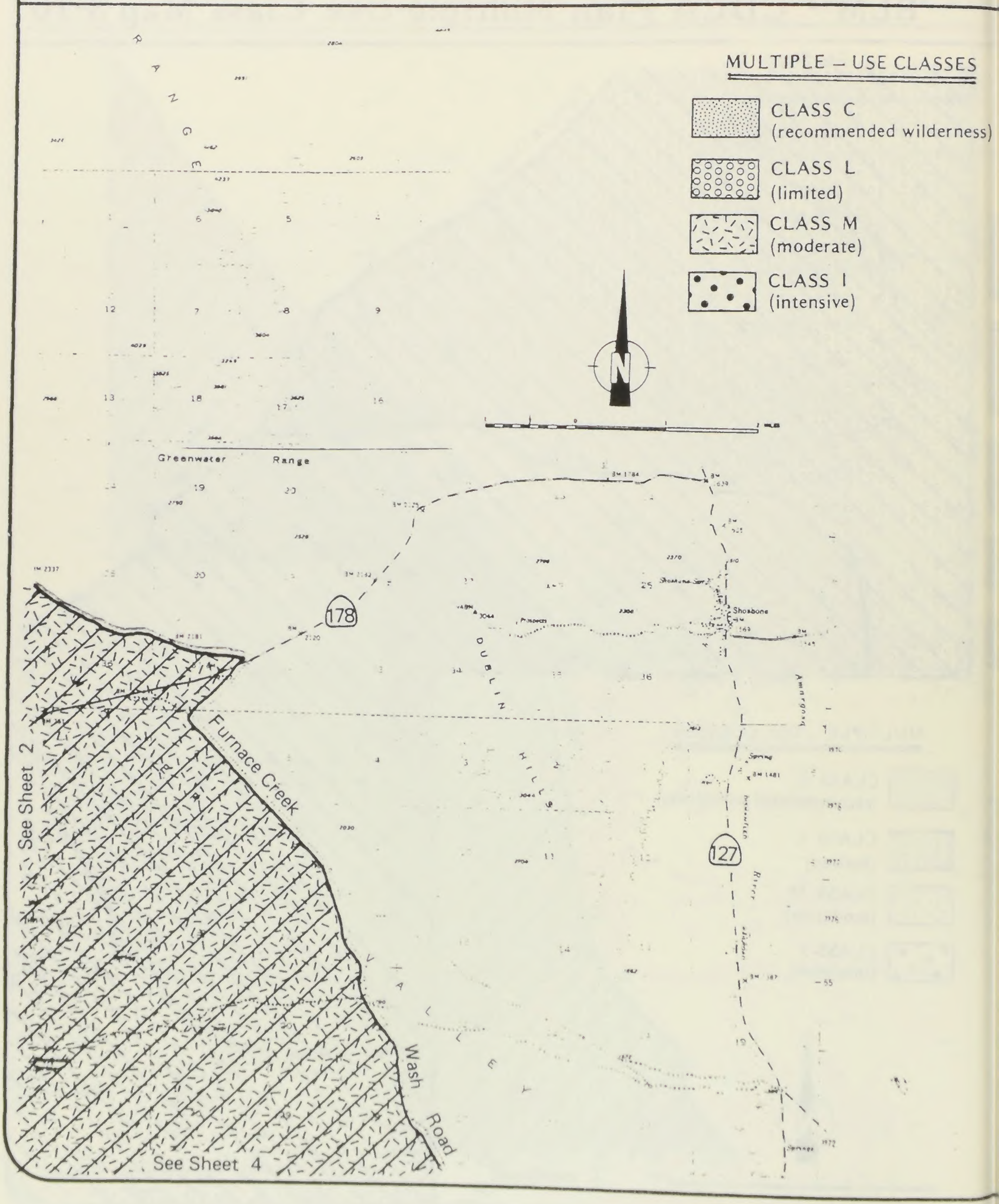
Sheet 1 of 4

Greenwater Valley
BLM - CDCA Plan Multiple-Use Class Map 3-10



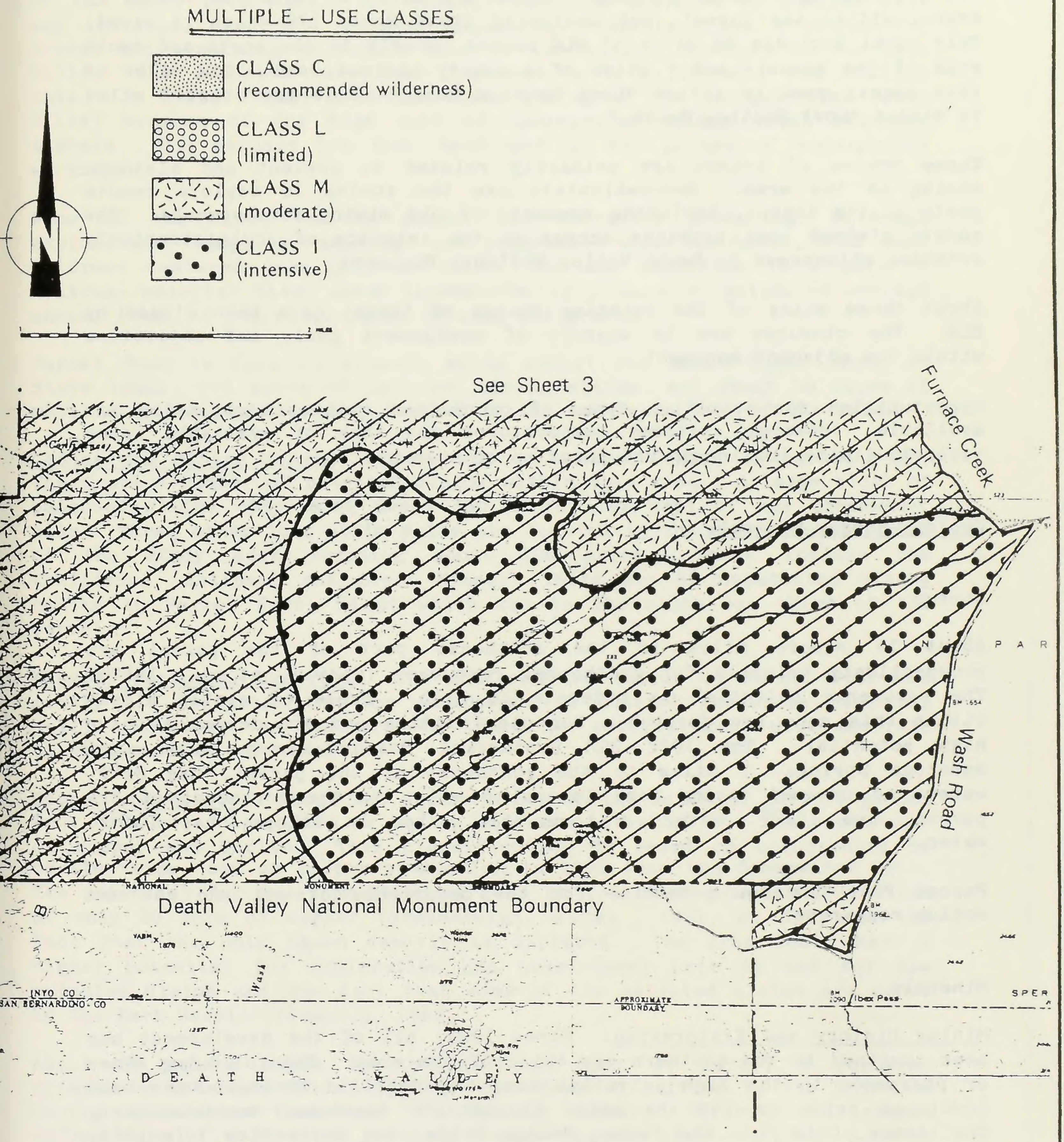
Sheet 2 of 4

Greenwater Valley
BLM - CDCA Plan Multiple-Use Class Map 3-1



Greenwater Valley

BLM - CDCA Plan Multiple-Use Class Map 3-10



Sheet 4 of 4

Recreation

The current recreation use of parcel four is low. The uses that occur are primarily vehicle dependent activities such as rockhounding, camping, and off-highway vehicle touring. There are about 89 miles of routes of travel within the parcel, not including State Route 178 which is paved. This total includes 80 miles of BLM routes (mostly in the north and south ends of the parcel) and 9 miles of a county claimed road. Six miles of this county road is titled "Lost Section Road," while the other 3 miles is titled "Lost Section South."

These routes of travel are primarily related to present and historic mining in the area. Recreationists use the routes to explore remote parts of the desert, including remnants of old mining developments. The county claimed road provides access to the interior of administratively endorsed wilderness in Death Valley National Monument.

About three miles of the existing routes of travel have been closed by BLM. The closures are in support of management goals and objectives within the adjacent monument.

Opportunities for primitive types of recreation such as backpacking are available. However, extreme temperatures and lack of available water severely limits the length and duration of such use.

Geology-Energy-Minerals

Energy

About 15 square miles in the southeast part of the parcel are prospectively valuable for geothermal resources (Godwin, et al., 1967). The occurence potential is moderate to high. Areas of gentle slopes within this zone are favorable for plant siting and are deemed to have high potential. The 1982 BLM Geothermal Resources map shows that Saratoga Springs, 7 miles to the southwest of the parcel, has 82°F. water; an unnamed spring near Tecopa, 8 miles to the northeast of the parcel, has 108°F. water; a bore hole, also in Tecopa, has 100°F. water.

Parcel Four has low potential for the occurrence of oil and gas and sodium resources.

Minerals

Mining History and Exploration: Since 1907, all of the development has been confined to the southern one third of the area. The following mines or prospects in the high potential area for metallic minerals have been developed prior to 1950 by adits (tunnels): American, American West, Confidence, Gold Hut, Who Cares, Paddys Pride, and Rusty Pick. In 1982, a plan of operations was filed for gold mining at the Who Cares Mine. Other than exposing a quartz vein, no mining was done, possibly because of the slump in gold prices in the mid-1980s and because there is no local mill.

BLM denied a plan of operations that proposed an open-pit talc mine north of the Rusty Pick Mine. The deposit has been explored by shallow pits and trenches. In 1987, Cypress Industrial Minerals filed a notice for access and trenching to expose talc of the Markley deposits in the Ibex Hills. The deposits have been explored by a drift adit and shallow cuts. In 1983, Pfizer abandoned talc mining at the Eclipse Mine (Ibex Hills) because of the high cost of underground mining which required timbers. The deposit has been developed by two groups of underground workings.

None of the mines in the parcel are currently producing, although exploration, sampling, testing, and assessment work continues, with most interest centered upon gold or talc. The one exception is a pair of Caltrans Material Sites which intermittently produce an estimated average annual total of 300 cubic yards of sand and gravel.

Parcel Four is open to mineral entry except for about 2,830 acres of State lands, 500 acres of patented mining claims, and about 50 acres of material sites rights-of-way located in the southeast part of the area.

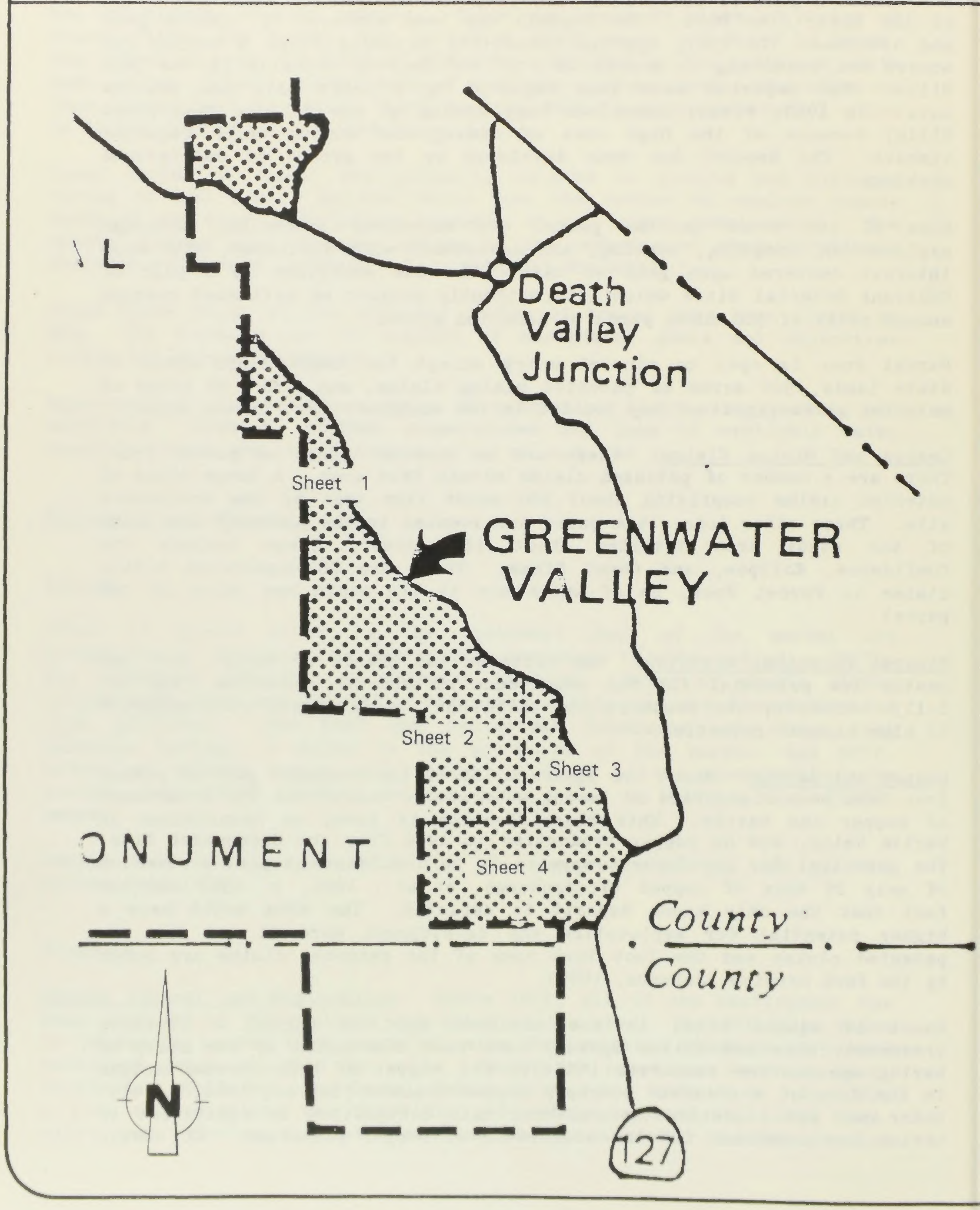
Leases and Mining Claims: There are no mineral leases on parcel four. There are a number of patented claims within this area. A large block of patented claims comprising about 380 acres lies west of the Greenwater site. Three other lode-claim pairs are located in the southern one third of the study area totaling about 120 acres. These include the Confidence, Eclipse, and Comet Mines. There are 86 unpatented mining claims in Parcel Four, 64 of which are in the south one third of the parcel.

Mineral Potential Overview: The northern two thirds of Parcel Four has mostly low potential for the occurrence of mineral resources (see map 3-11). However, the southern one third has several areas with moderate to high mineral potential.

Copper and Barite: About two square miles in the northern part of parcel four have been classified as having moderate potential for the occurrence of copper and barite. This classification is based on occurrences of barite veins, and on copper production in 1906 from the Greenwater Site. The potential for development appears to be low based on past production of only 20 tons of copper (Vredenburgh, et al., 1981, p. 251) and the fact that the only known deposit is depleted. The area would have a higher potential for exploration and development were it not for the patented claims and the fact that some of the patented claims are owned by the Park Service (Johnson, 1988).

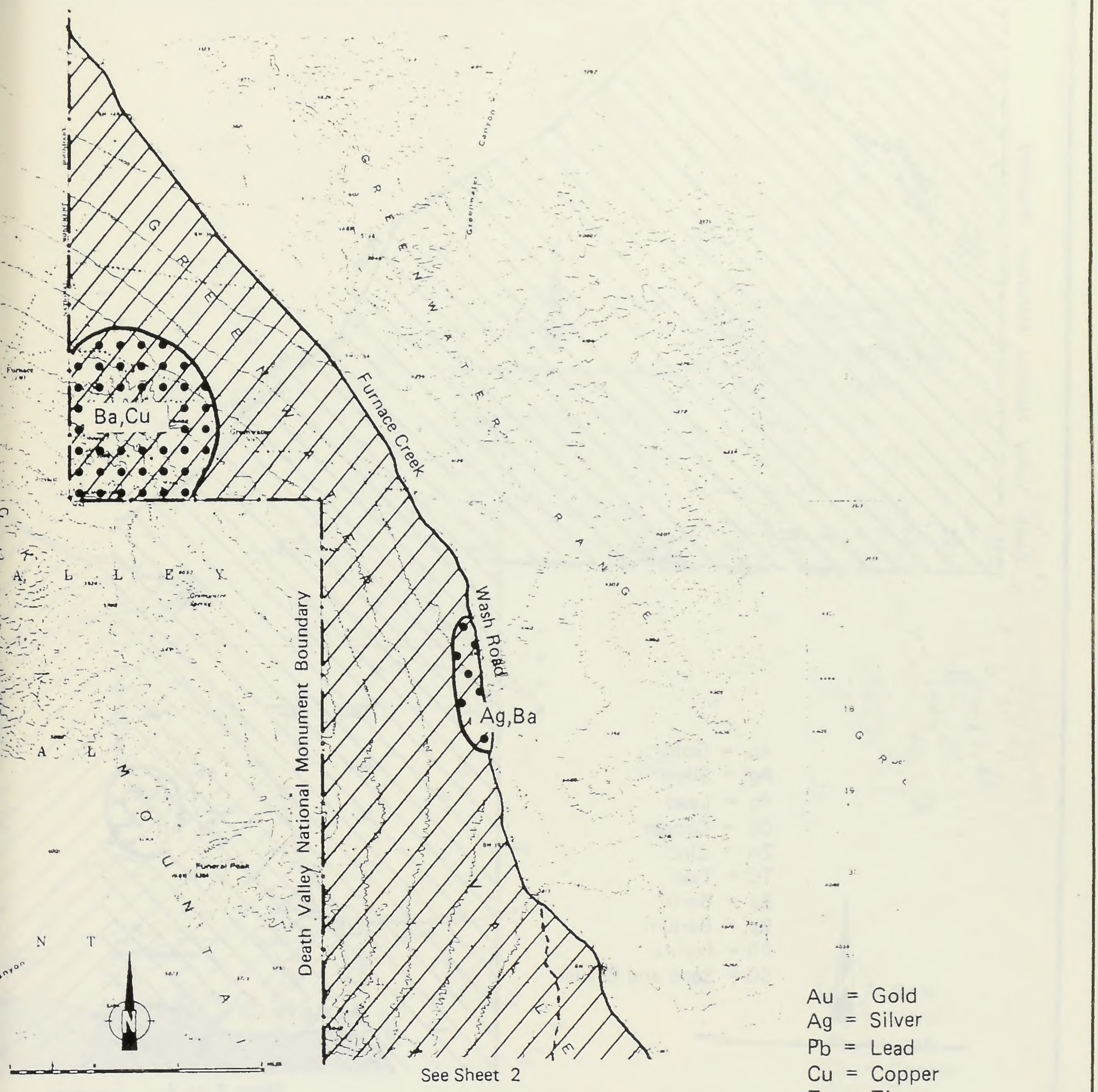
About 28 square miles in the northern half of Parcel 4 (between Greenwater site and Miller Spring) have been classified by the State as having speculative resources (MRZ-3b) for copper of hydrothermal origin in the form of a possible porphyry copper deposit (Taylor, 1986, p. 41). Under the BLM classification system, this designation is equivalent to having low potential for the occurrence of copper resources. It should

Greenwater Valley Index
Mineral Resource Potential
MAP 3-



Greenwater Valley
Mineral Resource Potential

MAP 3-11



See Sheet 2

▨ High potential for the Occurrence of energy and/or non-energy minerals

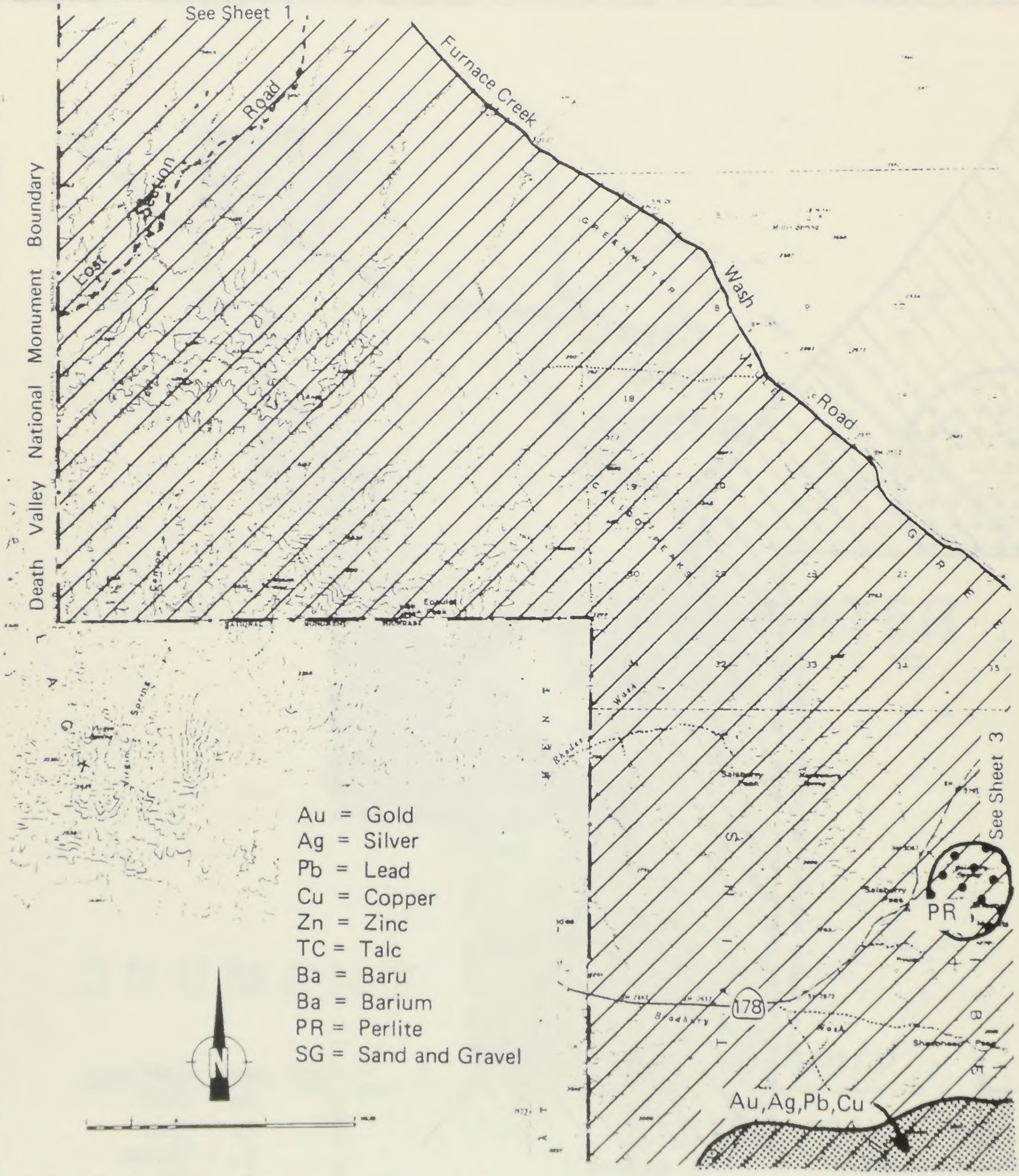
● Moderate potential for the Occurrence of energy and/or non-energy minerals

M Moderate mineral potential location in a High mineral potential area

Au = Gold
Ag = Silver
Pb = Lead
Cu = Copper
Zn = Zinc
TC = Talc
Ba = Baru
Ba = Barium
PR = Perlite
SG = Sand and Gravel

Sheet 1 of 4

Greenwater Valley
Mineral Resource Potential MAP 3-



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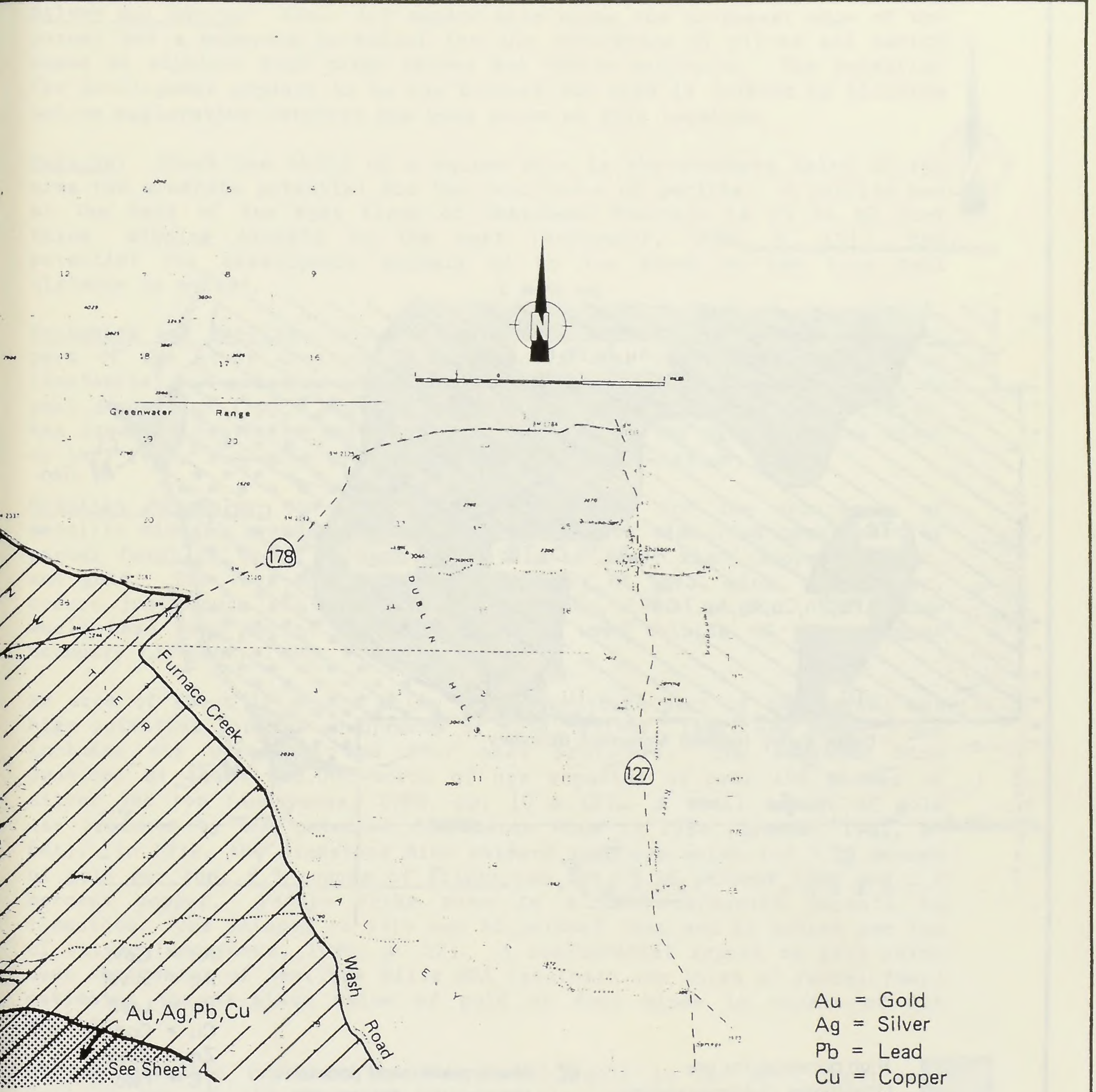
Greenwater Valley
Mineral Resource Potential MAP 3-11



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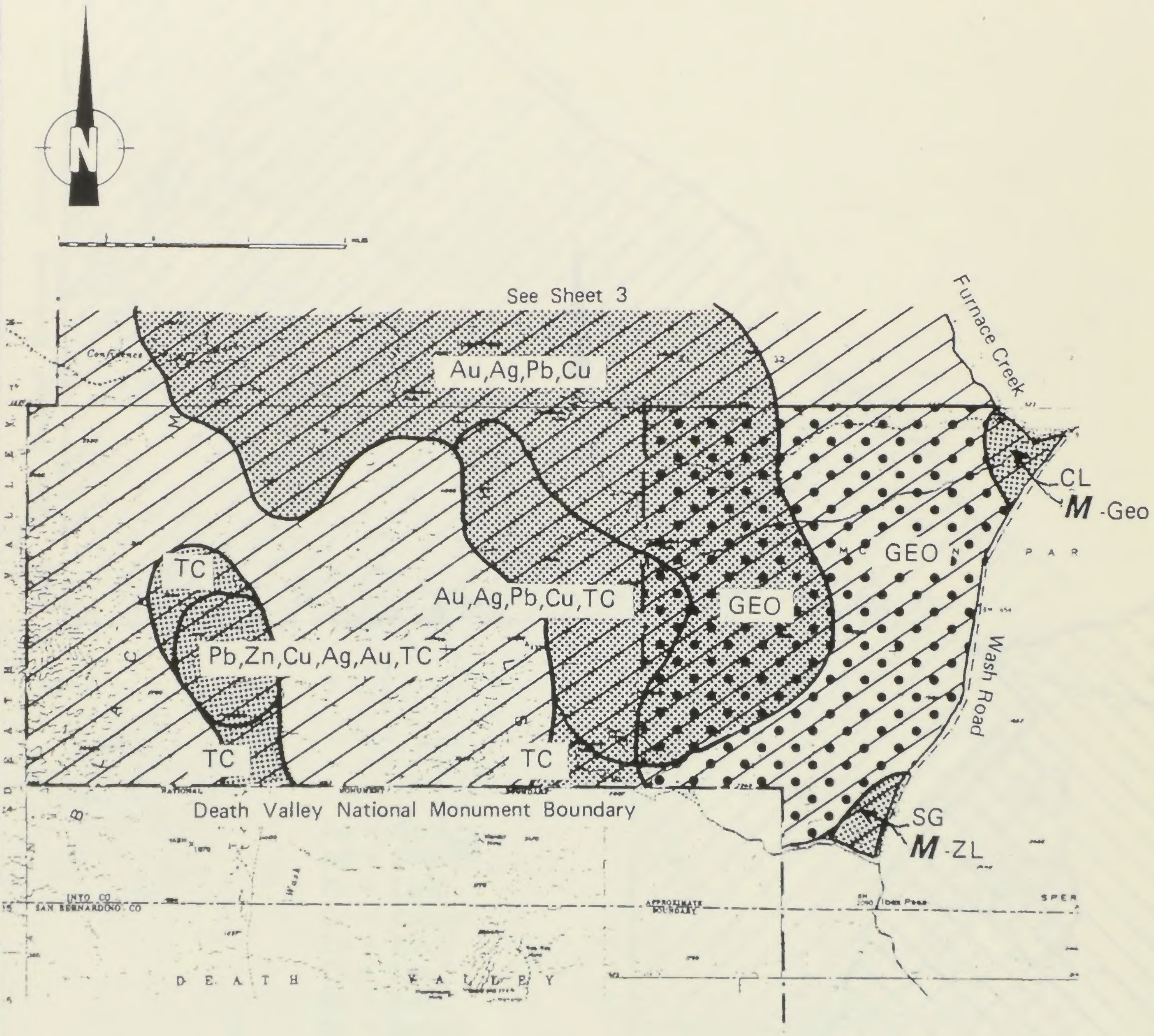
Greenwater Valley
Mineral Resource Potential

MAP 3-



▨ High potential for the Occurrence of energy and/or non-energy minerals

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Ba = Barium
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SG = Sand and Gravel
Geo = Geothermal

be noted, however, that the deposit has not been drilled or adequately investigated by geochemical studies. Future exploration could easily change the potential to moderate or high.

Silver and Barite: About 1/2 square mile along the northeast edge of the parcel has a moderate potential for the occurrence of silver and barite based on adjacent high assay values and trench exposures. The potential for development appears to be low because the area is covered by alluvium and no exploration interest has been shown at this location.

Perlite: About one third of a square mile in the southern third of the area has moderate potential for the occurrence of perlite. A perlite bed at the base of the east flank of Sheephead Mountain is 25 to 40 feet thick, dipping steeply to the east (Anonymous, 1980, p. 17). The potential for development appears to be low based on the long haul distance to market.

Bentonite and Zeolite: About a third of a square mile in the southeast part of the study area has high potential for the occurrence of clay (bentonite) and moderate potential for the occurrence of zeolite based on past production from a similar deposit just east of parcel four. Pfizer has produced bentonite and stockpiled zeolite at the open pit mine known as the "Ibex," $^1/_2$ mile west of Highway 127 (Van Allstine, 1984).

Metallic Minerals: An area of high potential for the occurrence of metallic mineral resources around the Rusty Pick mine (southwest part of parcel four) is based on past production of lead, zinc, copper, silver, and gold. The Ibex Mine, a former producer of lead, zinc, and silver, occurs just south of Parcel Four (Anonymous, 1980, p. 11). This mine would have seen recent development if it were outside of the monument boundary (Johnson, 1988).

An area of about 16 square miles in the southern part of the parcel has high potential for the occurrence of gold, silver, lead, and copper, and includes six prospects and four past producers. The American Mine produced at least $10,000 worth of ore reported at over 100 ounces of silver per ton (Anonymous, 1980, pp. 10 & 11). A small amount of gold was produced by the patented Confidence Mine in 1934 (Greene, 1981, p. 681). In 1939, the Gladstone Mine shipped some ore which ran 0.33 ounces of gold per ton, 6.5 ounces of silver per ton, 3.58 percent lead and 1.2 percent copper. Paddys Pride Mine is a lead carbonite deposit in limestone. Ore shipped in 1919 ran 40 percent lead and 24 ounces per ton of silver (Anonymous, 1980, p. 12). A confidential report on gold veins near the center of the Ibex Hills WSA (southern one third of Parcel Four) estimates the in-place value of gold at four mines in excess of $25 million.

Of the metallic resources in the parcel, gold is the most important. Gold is one of the Category 1 commodities which include most of the strategic and energy related mineral resources (see table 4-3). Gold, however, is not one of the 75 minerals stockpiled by the United States under PL 96-41. California is the second leading producer of gold in the U.S., most of which comes from the California Desert (Anderson, 1988, p. 1). Gold is an essential mineral for high technology and its intrinsic application cannot be replaced by another metal.

Talc: Talc is one of the Category I commodities which include most of the strategic and energy related mineral resources. Talc is used in ceramics, 35 percent; paints, 17 percent; paper, 13 percent; roofing, 11 percent; plastics, 7 percent; cosmetics, 5 percent; and other products, 12 percent. Most production (95 percent) is from Montana, New York, Texas, and Vermont (Virta, 1988, p. 158). In 1986, California produced 59,000 tons of talc valued at $1,394,000 (Burnett, 1987, p. 227). The U.S. is self-sufficient in most grades of talc.

There are two high potential areas for the occurrence of talc of the crystal springs formation near the southern end of parcel four. In 1983, a plan of operations proposed mining 200 tons of talc per month from a 2,100 foot-long vein northwest of the Rusty Pick Mine. The plan was denied to preclude impairment of wilderness values. The other talc zone to the east includes six prospects and mines. The Arletta is an idle, past producer with shallow cuts (NW1/4 Sec. 19, T.20N., R.6E.). The Comet (patented) was a past producer by Pfizer in W1/2 Section 18, T.20N., R.6E. The Eclipse (patented) is a recent producer by Pfizer in SW1/4 Section 7, NW1/4 Section 18, T.20N., R.6E. The Mammoth is a past producer by Pfizer developed by open pit in SE1/4 Section 36, T.20N., R.5E. The Markley is a discontinuous talc body extending for 2.5 miles and under exploration by Cyprus Exploration in Section 12, T.20N., R.5E. The Jim Frances (Giant) mine is a past producer in SW1/4, Section 19, T.20N., R.6E. (Wright, 1968, pp. 35-56).

Sand and Gravel: About 1/4 square mile in the southeast corner of Parcel Four has high potential for the occurrence of sand and gravel resources based on past production by Caltrans from two material sites in a wash deposit. Such a source is important, as stated below:

> "To the surprise of most, the vast desert areas of Southern California offer only limited quantities of mineral aggregate of the quality required for highway structural sections, concrete structures or rock slope protection (rip-rap). This situation appears to be attributable to the low rainfall characteristics of the desert. Mineral aggregate sites are customarily found only in some of the alluvial fans and washes where the deposits are carried down from the mountain areas by heavy storm runoff. Unfortunately, most of the larger (and better) fan deposits are now located in WSAs. Many fan deposits, while appearing to be good quality on the surface, may contain shallow deposits of undesirable clay and caliche or (most often) may contain a very poor quality mineral aggregate" (Longstreet, 1986, p. 3).

Water

There are three springs located within the Ibex Hills: Sheedhead, Salsberry, and Montgomery Springs. Flow levels have not been quantified, and the primary use of any surface water is by resident wildlife species.

PARCEL FIVE: PINTO BASIN

Wildlife

Wildlife habitats within the proposed transfer area are generally associated with the creosote brush scrub and wash woodland vegetation types. The creosote brush scrub type, including both rocky upland areas dominated by white bur sage (Ambrosia dumosa) and the lower creosote (Larea tridentata) dominated areas, is the most widespread vegetation type in the area proposed for transfer. Animal species commonly found within this vegetation type include coyote (Canis latrans), black-tailed hare (Lepus californicus), LeConte Thrasher (Toxostoma lecontei), and desert iguana (Dipsosaurus dorsalis).

Smoke tree (Dalea spinosa), palo verde (Cercidium floridum), and desert willow (Chilopsis linearis) are common plant species observed in the wash woodland vegetation type, along with commonly observed animal species such as coyote, Audubon cottontail (Sylvilagus audubonii), Verdin (Auriparus flaviceps), Phainopepla (Phainopepla nitens), Greater Road Runner (Geococcyx californianus), western whiptail (Cnemidophorus tigris), and zebra-tailed lizard (Callisaurus draconoides).

Unique Habitats

There are no unique habitats within the parcel.

Significant Species

No wildlife species presently listed under Section 4 of the Endangered Species Act are known or believed to occur within the lands designated for possible transfer to the National Park Service. One BLM sensitive species (desert tortoise, Gopherus agassizi) is, however, present within this area.

The desert tortoise which is also a category 2 candidate species for listing as threatened or endangered by the Fish and Wildlife Service (1985) is present in concentrations of up to 20-50 per square mile (BLM 1977). This concentration is located within a 4,000 acre block adjacent to the monument's existing eastern boundary in township 3 south, range 13 east. These tortoises are part of a relatively small core area representing the greatest known concentration of tortoises within Joshua Tree National Monument (50-100 per square mile). The northern half of the BLM-administered part of this concentration area is within the Pinto Basin Parcel.

Game animals

The only game species present within the proposed transfer area are mule deer (Odocoileus hemionus) in very sparse numbers throughout the area; Gambel quail (Lophortyx gambelii) in wash area and usually within close proximity to water; and mourning doves (Zenaidura macroura) coming in to water at available water sources.

Botany

There are no known federally or state-listed plant species within the Pinto Basin parcel. However, two BLM sensitive species (candidates for federal listing) have been recorded in the vicinity:

(a) Foxtail Cactus (Coryphantha vivipara var. alversonii) is recorded near the eastern boundary of the parcel, at elevations around 1000 feet.

(b) California Snakebush (Colubrina californica) has been documented in Boulder Canyon, approximately 8 miles to the southeast of the parcel.

Cultural Resources

The area is a portion of the Pinto Basin, and has experienced a minimum of cultural resource inventory due to it's remote geographical location. A records search of the archaeological sites that have been recorded in the region, however, reveals a propensity for relatively low site density. The few sites which have been recorded, nonetheless, tend to be important, multiple use sites, usually associated with centralized hunting and gathering activities. The areal distribution of these, and other types of sites, is not known, due to the lack of research thus far performed.

Existing threats to these resources predominately stem from pot hunting. The impacts thus far have been minimal.

Lands

The entire area is classified for multiple use management under the Classification and Multiple Use Act of September 19, 1964. Otherwise, there are no recorded lands actions within the parcel.

The entire 4,480 acre parcel is classified as multiple use class L (limited use) by the CDCA plan (see map 3-12).

Management Presence

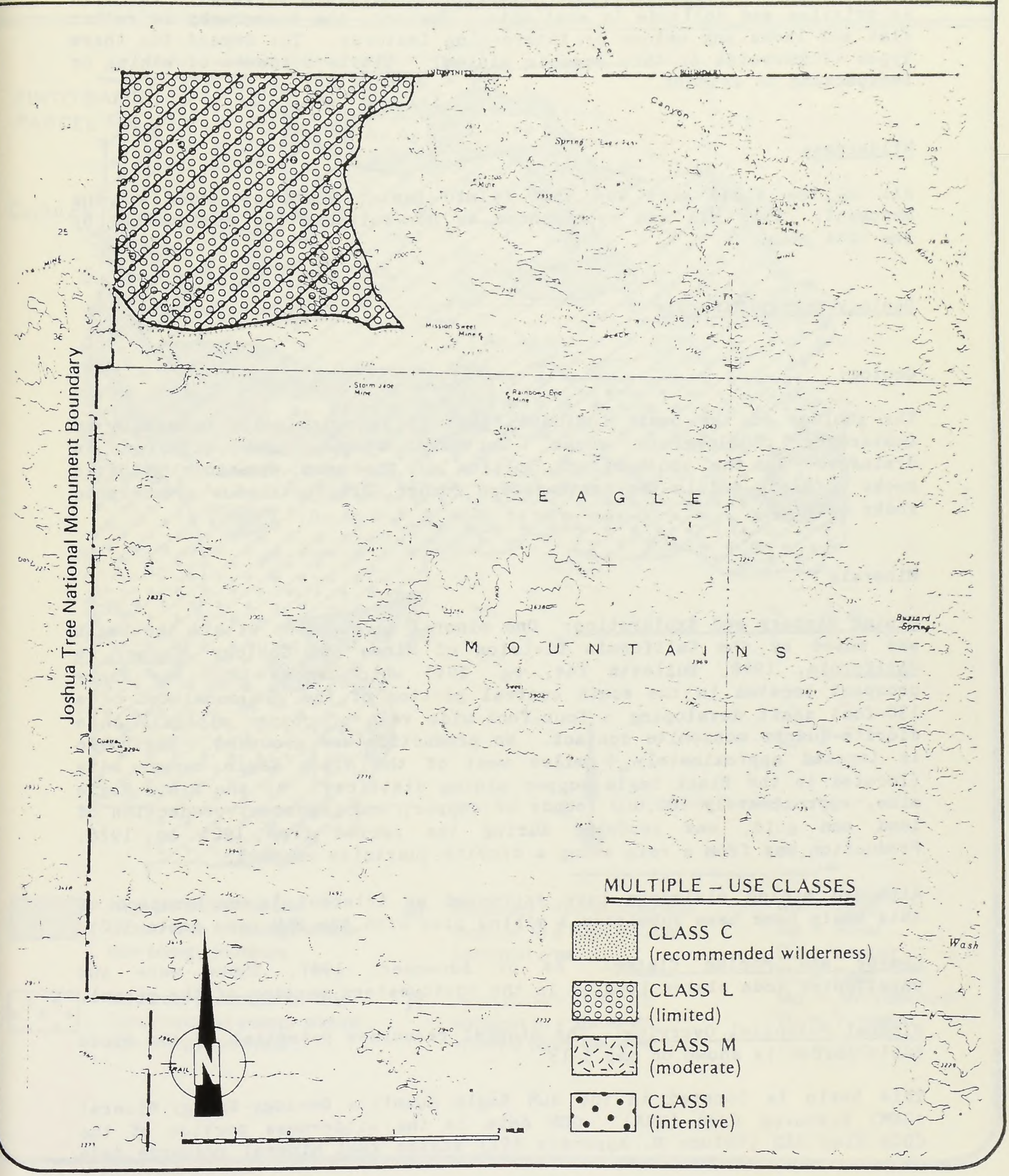
BLM's staff visits the parcel relatively infrequently. Rangers are based in Desert Center and Indio, but rarely have occasion to enter the parcel. Resource staff specialists (e.g. biologists, archaeologists, geologists) visit an area on an as-needed basis: for example, to process a right of way application or a mining plan of operation, or to prepare an ACEC management plan. There has been little such activity in the parcel, so visits have been extremely infrequent.

Recreation

Recreational use of this 4,480 acre parcel is minimal. With the exception of a few short spur routes associated with past mining operations, no vehicle routes penetrate the area. This lack of access

PINTO BASIN

BLM - CDCA Plan Multiple-Use Class Map 3-12



precludes most of the vehicle dependent activities known to occur in the general area.

Opportunities for primitive and unconfined recreation do exist. The area is pristine and solitude is available. However, the topography is rather flat and lacks any unique or interesting features. The demand for these types of pursuits in this area is minimal. Little evidence of hiking or backpacking is evident.

Wilderness

All of the 4,840 acre WSA 334A (Pinto Basin) would be added to the monument. This WSA was recommended as non-suitable for designation by the CDCA plan.

Geology-Energy-Minerals

Geology

The geology of the basin indicates that it is principally underlain by Quaternary conglomerate rocks, Tertiary basalt, and alluvium in drainages. In the southwestern portion of the area, Mesozoic granitic rocks outcrop, and in the northeastern corner, Pre-Cretaceous metamorphic rocks outcrop.

Minerals

Mining History and Exploration: One mineral development within the basin was noted by the California Division of Mines and Geology (Copper in California, 1948, Bulletin 144, pg. 294) which shows that the Nancy prospect located in the south central portion of the WSA consisted of a 130-foot shaft developing a four-foot-wide vein of copper minerals on a diorite-quartz monzonite contact. No production was recorded. The basin is located approximately 6 miles west of the Black Eagle copper mine (located in the Black Eagle copper mining district). At the Black Eagle mine, approximately 100,000 pounds of copper, and important production of lead and gold, was produced during the period from 1925 to 1926. Production was from a vein along a diorite-quartzite contact.

Although mining claimants have expressed an interest in exploration of this basin none have submitted a mining plan with the BLM (see table 3-2).

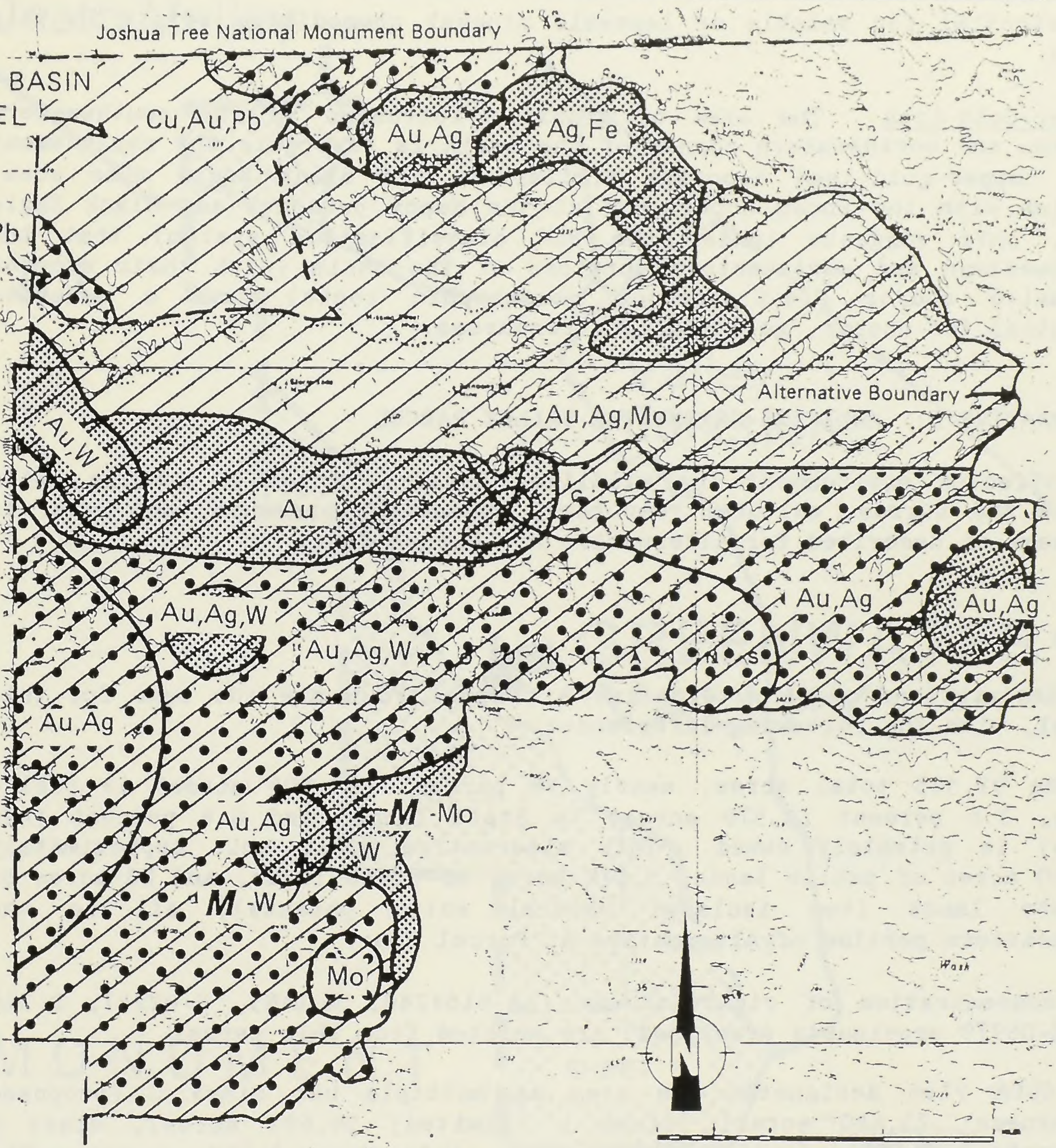
Leases and Mining Claims: As of December, 1987, there were two unpatented lode claims located in the northwestern portion of the parcel.

Mineral Potential Overview: The mineral resources potential of the Pinto Basin parcel is shown on map 3-13.

This basin is located in the BLM Eagle Mountain Geology-Energy-Mineral (GEM) Resource Area (GRA). GEM data in the wilderness portion of the CDCA Plan EIS (Volume B, Appendix III) stated that mineral resource data

Pinto Basin and Eagle Mountains Alternative

Mineral Resources Potential MAP 3-13



▩ High potential for the Occurrence of energy and/or non-energy minerals

⁚ Moderate potential for the Occurrence of energy and/or non-energy minerals

M Moderate mineral potential location in a High mineral potential area

H High mineral potential location in a Moderate mineral potential area

Au = Gold
Ag = Silver
Cu = Copper
Pb = Lead
Mo = Molybdenum
W = Tungsten
Fe = Iron

for the Pinto Basin WSA (i.e. the transfer parcel, since the boundaries are identical) had not been fully analyzed, integrated, and interpreted during the 1980 recommendation process. The EIS did state, however, that the WSA had undefined potential for metallic minerals and limestone. More than two patented mining claims were noted within the WSA in 1980.

No potential for salable or leasable mineral commodities exists in this basin.

Copper-Gold-Lead: The area of granitic intrusion in the southwestern portion and northeastern corner of the basin is favorable for replacement type copper-gold-lead deposits similar to the Black Eagle mine area. Coupled with the known occurrence at the Nancy prospect and Black Eagle mine, this suggests (under the BLM classification system) that the southwestern and northeastern portions of the basin (with their exposed intrusive and/or Pre-Cretaceous metamorphic rocks) have a moderate potential for copper, gold and lead resources.

ALTERNATIVE B: MODIFIED GREENWATER VALLEY PARCEL

The affected environment for wildlife, botany, livestock grazing, wild horses and burros, cultural resources, management presence, and water is the same as described for Alternative A: Parcel Four.

Lands

The descriptions under Alternative A: Parcel Four are the same for this parcel, with the following differences.

Of the 97,505 total acres, nearly 96 percent (93,506 acres) is public lands, 3.6 percent (3,579 acres) is State lands, and 0.4 percent (420 acres) is privately owned. This alternative would omit approximately 16,000 acres of public lands, 3,579 acres of State lands, and 80 acres of private lands (two isolated mineral entry patents), all in the southeastern portion of Alternative A: Parcel Four.

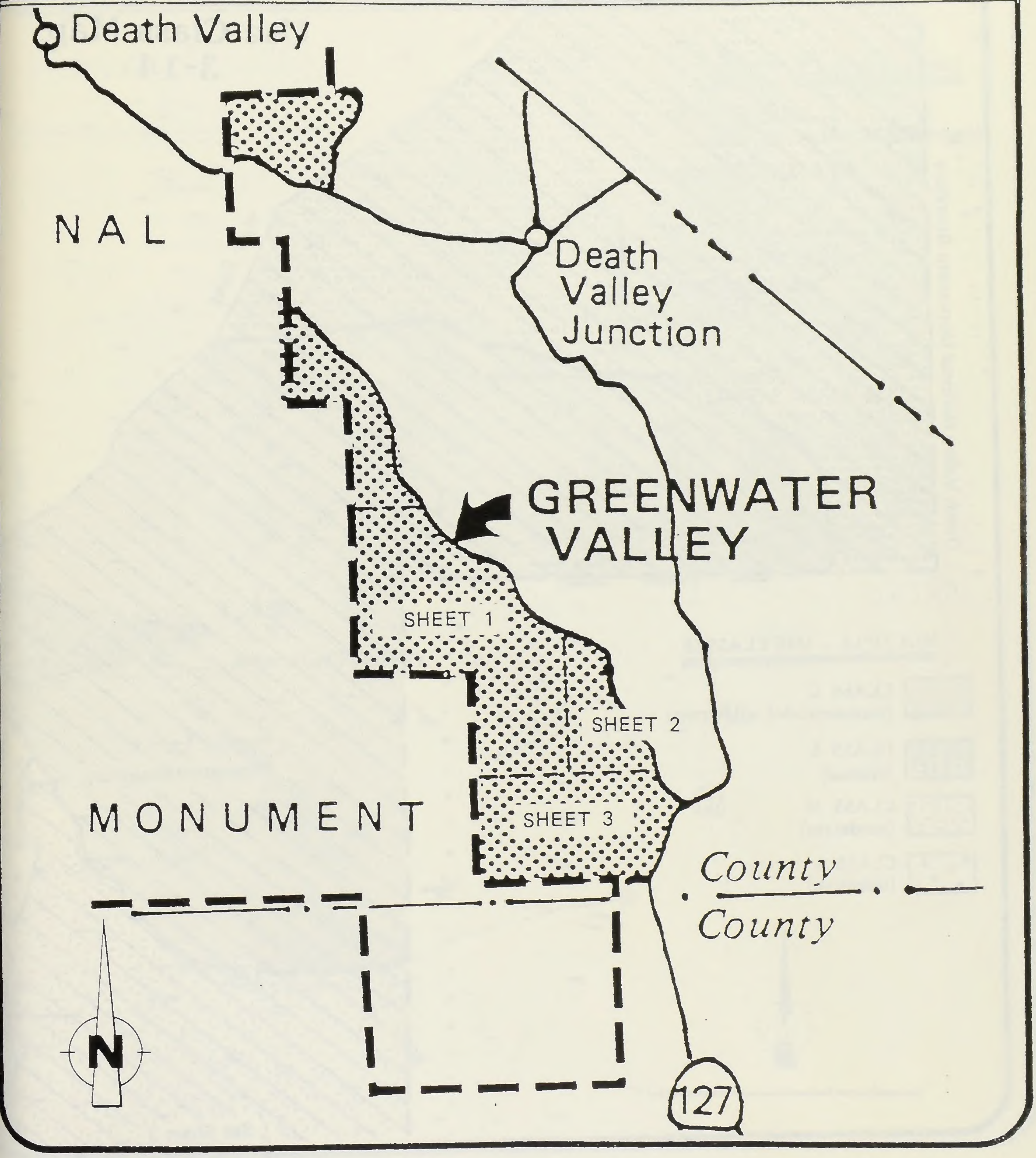
The concentration of rights-of-way (LA-0164240, R-1483, R-01247, R-316 and R-06979 previously described) are omitted from this parcel.

The CDCA Plan designated the area as multiple use class C (proposed wilderness; 23,440 acres), class L (limited; 39,691 acres), class M (moderate; 18,091 acres), and class I (intensive; 5,952 acres). The multiple use class boundaries are shown on map 3-14.

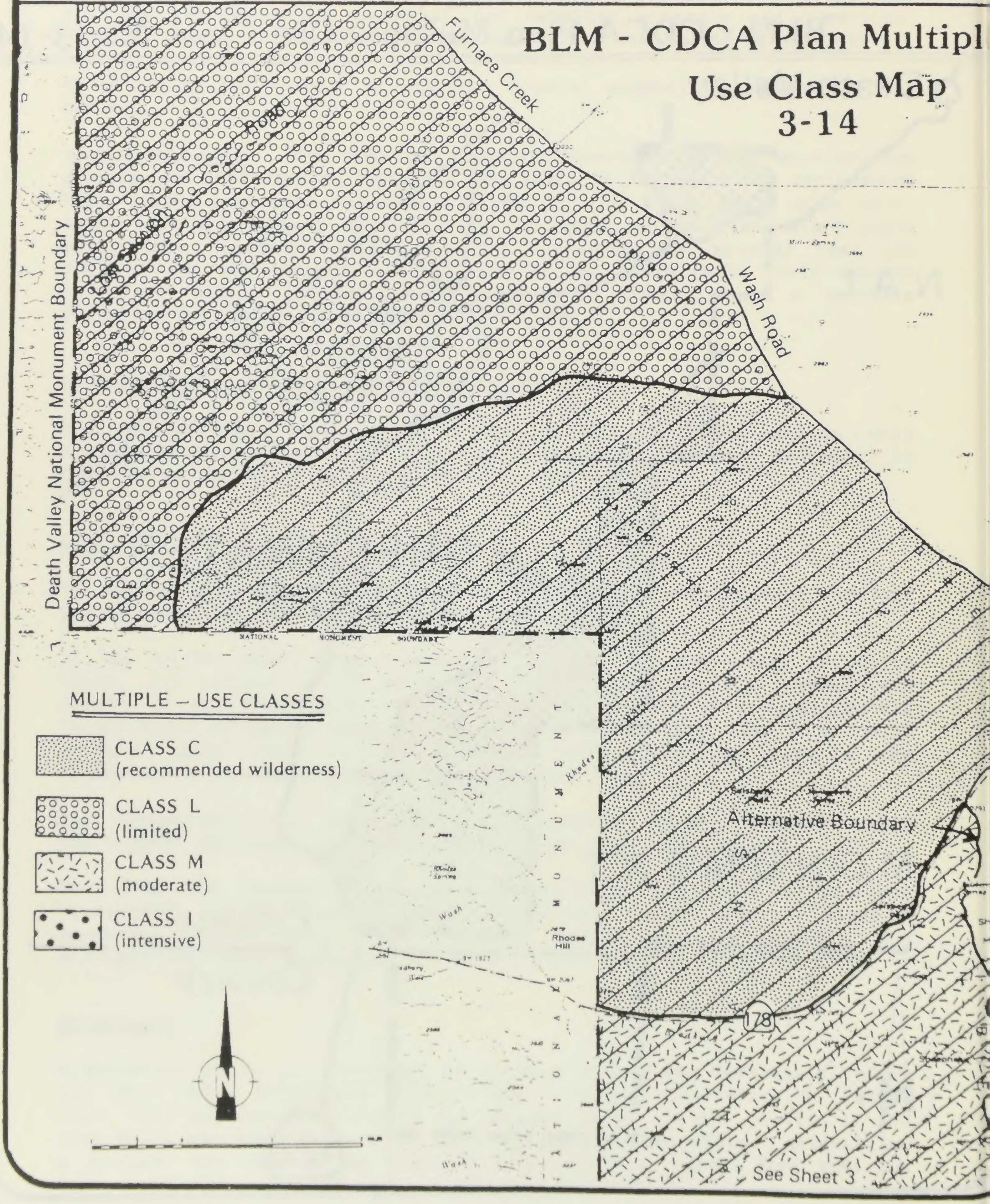
Wilderness

Alternative B, in its entirety, is located within the Greenwater Valley and Ibex Hills Wilderness Study Areas. Unlike Alternative A: Parcel Four, this alternative excludes the non-WSA lands and the portion of the Ibex Hills WSA that is east of the crest of the Ibex Hills. Alternative B contains the same 23,440 acres as Alternative A: Parcel Four that BLM has recommended as suitable for wilderness designation.

Greenwater Valley/Ibex Hills Alternative
INDEX
BLM - CDCA Plan Multiple-Use Class Map 3-14

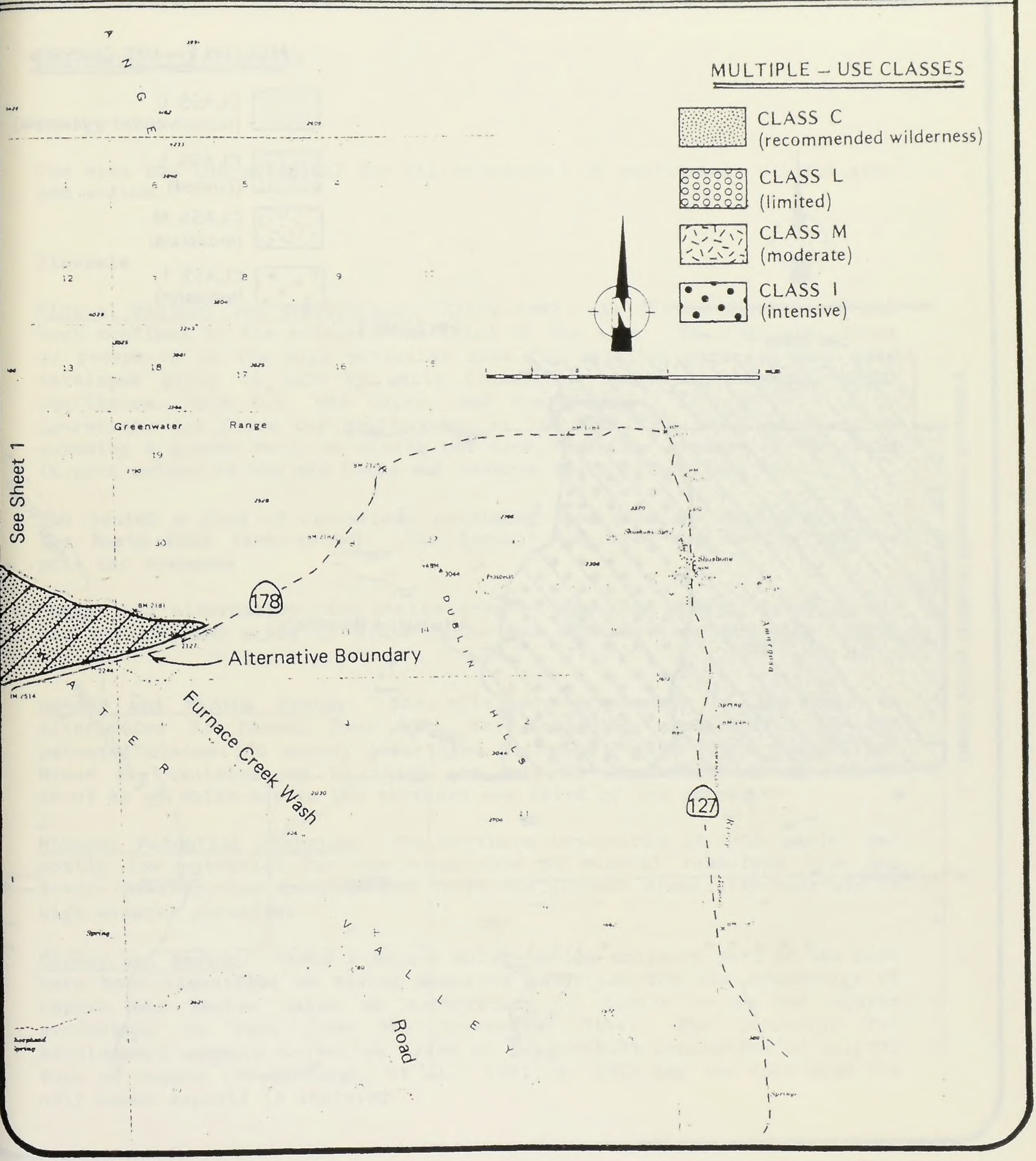


Greenwater Valley/Ibex Hills Alternative



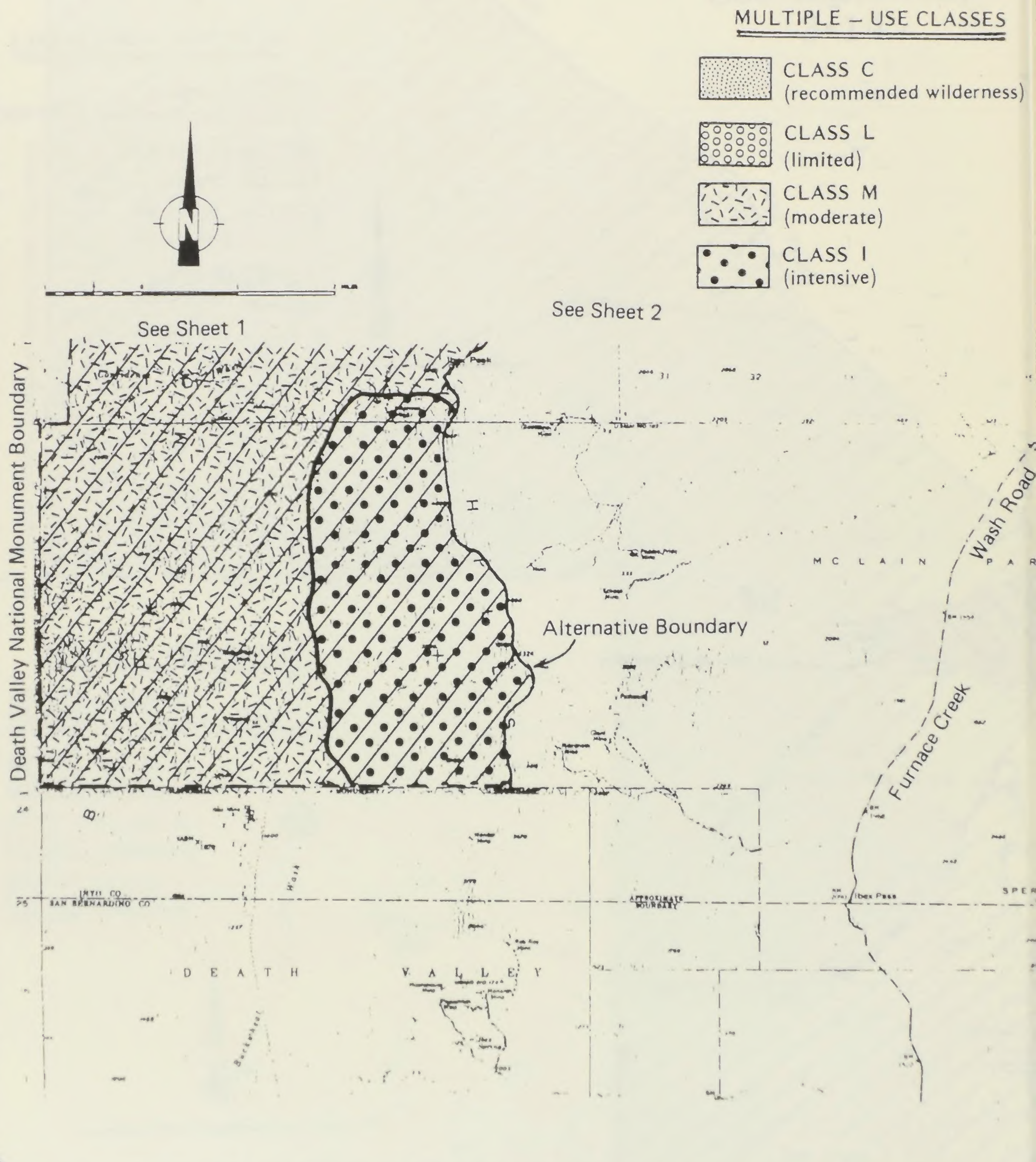
Sheet 1 of 3

Greenwater Valley/Ibex Hills Alternative
BLM - CDCA Plan Multiple-Use Class Map 3-14



Sheet 2 of 3

Greenwater Valley/Ibex Hills Alternative
BLM - CDCA Plan Multiple-Use Class Map 3-14



SHEET 3 of 3

Recreation

Recreation use of Alternative B is very similar to Alternative A: Parcel Four. However, Alternative B contains 22 less miles of designated open routes of travel.

Geology-Energy-Minerals

Energy

The area has low potential for the occurrence of geothermal, oil and gas, and sodium.

Minerals

Mineral History and Exploration: Since 1907, all of the development has been confined to the southern one-third of the area. The following mines or prospects in the high potential area for metallic minerals have been developed prior to 1950 by adits (tunnels): American, American West, Confidence, Gold Hut, Who Cares, and Rusty Pick. In 1982 a plan of operations was filed for gold mining at the Who Cares mine. Other than exposing a quartz vein, no mining was done, possibly because of the slump in gold prices in the mid 1980s and because there is no local mill.

BLM denied a plan of operations proposing open pit talc mining north of the Rusty Pick (see below). The deposit has been explored by shallow pits and trenches.

Under this alternative, the entire area is open for mineral entry except for about 3,500 acres of State lands and 420 acres of patented mining claims.

Leases and Mining Claims: The affected environment is the same as Alternative A: Parcel Four with the following exceptions: 1) the patented claims (80 acres) associated with the Paddys Pride and Eclipse Mines are excluded and 2) there are only 65 unpatented mining claims, about 43 of which are in the southern one third of the parcel.

Mineral Potential Overview: The northern two-thirds of this parcel has mostly low potential for the occurrence of mineral resources (see map 3-4). However, the southern one third has several areas with moderate to high mineral potential.

Copper and Barite: About 2 square miles in the northern part of the area have been classified as having moderate potential for the occurrence of copper and barite based on occurrences of barite veins and copper production in 1906 from the Greenwater Site. The potential for development appears to be low based on meager past production of only 20 tons of copper (Vredenburgh, et al., 1981, p. 251) and the fact that the only known deposit is depleted.

Silver and Barite: About 1/2 square mile along the northeast edge of parcel four has moderate potential for the occurrence of silver and barite resources based on adjacent high assay values and trench exposures. The potential for development appears to be low because the area is covered by alluvium and no exploration interest has been shown at this location.

Perlite: About eight acres in the southern third of the area has moderate potential for the occurrence of perlite. A perlite bed at the base of the east flank of Sheephead Mountain is 25 to 40 feet thick, dipping steeply to the east (Anonymous, 1980, page 17). The potential for development appears to be low based on the long haul distance to market.

Metallic Minerals: An area of high potential for the occurrence of metallic mineral resources around the Rusty Pick mine (southwest part of the parcel) is based on past production of lead, zinc, copper, silver, and gold. The Ibex mine, a former producer of lead, zinc, and silver, occurs just south of the study area (Anonymous, 1980, p. 11).

An area of about $5^3/_4$ square miles in the southern part of the parcel has high potential for the occurrence of gold, silver, lead, and copper, and at least three prospects and two past producers. The American mine produced at least $10,000 worth of ore reported at over 100 ounces of silver per ton (Anonymous, 1980, pp. 10 & 11). A small amount of gold was produced by the patented Confidence mine in 1934 (Greene, 1981, p. 681). A confidential report on gold veins near the center of the Ixex Hills WSA (southern one third of the study area) estimates the in-place value of gold at four mines in excess of $25 million.

Talc: There is a high potential for the occurrence of talc in the Crystal Springs Formation near the southern end of the parcel. In 1983, a plan of operations proposed mining 200 tons of the talc per month from a 2,100 foot-long vein northwest of the Rusty Pick mine. The plan was denied to preclude impairment of wilderness values.

ALTERNATIVE C:
EAGLE MOUNTAINS

Wildlife

Wildlife habitats within the proposed transfer area are generally associated with the creosote brush scrub, cactus scrub, and wash woodland vegetation types. The creosote brush scrub type, including both rocky upland areas dominated by white bur sage (Ambrosia dumosa) and the lower creosote (Larea tridentata) dominated areas, is the most widespread vegetation type in the area proposed for transfer. Animal species commonly found within this vegetation type include coyote (Canis latrans), black-tailed jack rabbit (Lepus californicus), LeConte Thrasher (Toxostoma lecontei), and desert iguana (Dipsosaurus dorsalis).

Dominant plant species occurring in the cactus scrub are various species of cholla (Opuntia spp.), barrel cactus (Ferocactus acanthodes), and foxtail cactus (Coryphantha vivipara). Desert woodrat (Neotoma lepida), cactus mouse (Peromyscus eremicus), cactus wren (Campylorhynchus bruneicapillus), and black-troated sparrow (Amphispiza bilineata) represent animal species often observed in this community.

Smoke tree (Dalea spinosa), palo verde (Cercidium floridum), and desert willow (Chilopsis linearis) are common plant species observed in the wash woodland vegetation type, along with commonly observed animal species such as coyote, Audubon cottontail (Sylvilagus audubonii), Verdin (Auriparus flaviceps), Phainopepla (Phainopepla nitens), Greater Road Runner (Geococcyx californianus), western whiptail (Cnemidophorus tigris), and zebra-tailed lizard (Callisaurus draconoides).

Unique Habitats

The only known special habitat feature within the Eagle Mountains parcel is the water source at Buzzard Spring.

Significant Species

No wildlife species presently listed under Section 4 of the Endangered Species Act are known or believed to occur within the lands designated for possible transfer to the National Park Service. Two BLM sensitive species (desert tortoise, Gopherus agassizi; and desert bighorn sheep, Ovis canadensis nelsoni) are, however, present within this area.

Desert Tortoise: The desert tortoise, which is also a category 2 candidate species for listing as threatened or endangered by the Fish and Wildlife Service (1985), is present in concentrations up to 20-50 per square mile (BLM 1977). This concentration is located within a 4,000 acre block adjacent to the monument's existing eastern boundary in Township 3 South, Range 13 East. These tortoises are part of a relatively small core area representing the greatest known concentration of tortoises within Joshua Tree National Monument (50-100 per square mile).

Bighorn Sheep: The Eagle Mountains contain approximately 96,000 acres of potential mountain sheep habitat. This mountain range is the easternmost range of an interconnected series of ranges which also includes the Cottonwood, Hexie, Pinto, and Little San Bernardino Mountains.

At present 38,000 acres (40 percent) of the potential mountain sheep habitat within the Eagle Mountains is administered by the National Park Service, while 54,000 acres (60 percent) is administered by the BLM. The remaining 4 percent is owned by the State of California or is in private ownership. Of the mountain sheep habitat presently administered by BLM, 20,000 acres (38 percent) is proposed for transfer to the National Park Service.

During May 1986 a sheep survey of the Eagle Mountains was conducted by the California Department of Fish and Game and National Park Service.

After five hours of helicopter time a total of 36 sheep were observed. Based on a "rule-of-thumb" observation rate of 60 percent, the actual population in the Eagle Mountains should approximate 60 animals. During the time of the survey over 80 percent of the observed mountain sheep were concentrated within the relatively well-watered portion of the west Eagle Mountains already under Park Service administration. The remaining sheep in the population also seem to be associated with existing water sources. Small bands were observed in the Eagle Tank-Cactus Mine area west-northwest of the Black Eagle Mine, and in the Buzzard Spring-Eagle Mountain area. In prior years bands have also been observed in the Hayfield Spring (Anshutz Well) and Hayfield Summit Spring areas.

As proposed, the transfer may involve up to 25 percent of the present mountain sheep population. This would include all sheep associated with the Cactus Mine-Eagle Tank and Buzzard Spring water sources.

Game animals

The only game species present within the proposed transfer area are mule deer (Odocoileus hemionus) in very sparse numbers throughout the area; Gambel Quail (Lophortyx gambelii) in wash areas and usually within close proximity to water; and Mourning Doves (Zenaidura macroura) coming in to water at available water sources.

Botany

There are no known federally or state-listed plant species within the Eagle Mountains parcel. However, two BLM sensitive species (candidates for federal listing) have been recorded in the vicinity:

(a) Foxtail Cactus (Coryphantha vivipara var. alversonii) is recorded near the eastern boundary of the parcel, at elevations around 1,000 feet.

(b) California Snakebush (Colubrina californica) has been documented in Boulder Canyon, approximately eight miles to the southeast of the parcel.

More than likely, both species occur within the parcel as well since both types of habitats supporting recorded populations are also found within the boundaries of that parcel.

Livestock Grazing

There is no current or scheduled livestock grazing within the parcel.

Wild Horse and Burros

There are no known wild horses or burros within the parcel.

Cultural Resources

The area includes portions of the Eagle Mountains which reach an elevation of nearly 4,000 feet and a segment of the Pinto Basin. Less then 1 percent of the total area has been sampled for the presence of cultural resources. The archaeological inventories that have been performed distinguish the area as having a low density of sites. The sites, however, are important, characterized by centralized areas of multiple use, usually associated with hunting and gathering. The sites are usually close to springs or major drainages.

This area is also distinguished by historical mining sites. One of these has been associated with both historic and prehistoric quarry/mining activities. This site is a relatively large jade quarry located in the northwestern portion of the parcel.

Because of the mountainous and remote location of the parcel, the archaeological and historical sites have experienced relatively little impact. The major cause of the impacts which have occurred has been from vandalism.

Lands

The entire area is classified for multiple use management under the Classification and Multiple Use Act of September 19, 1964. In addition to this, BLM has issued the following authorizations within the subject area:

R 04896	100 foot wide road R/W granted to Kaiser Steel Corporation under the Act of January 31, 1895. The grant affects Sections 29, 30, 32, 33, and 34, T. 3 S., R. 14 E., SBM.
R 04898	50 foot wide R/W for and electric transmission line and a pipeline, granted to Kaiser Steel Corporation under the Act of February 15, 1901. The grant affects Sections 29, 30, 32, 33, and 34, T. 3 S., R. 14 E., SBM.

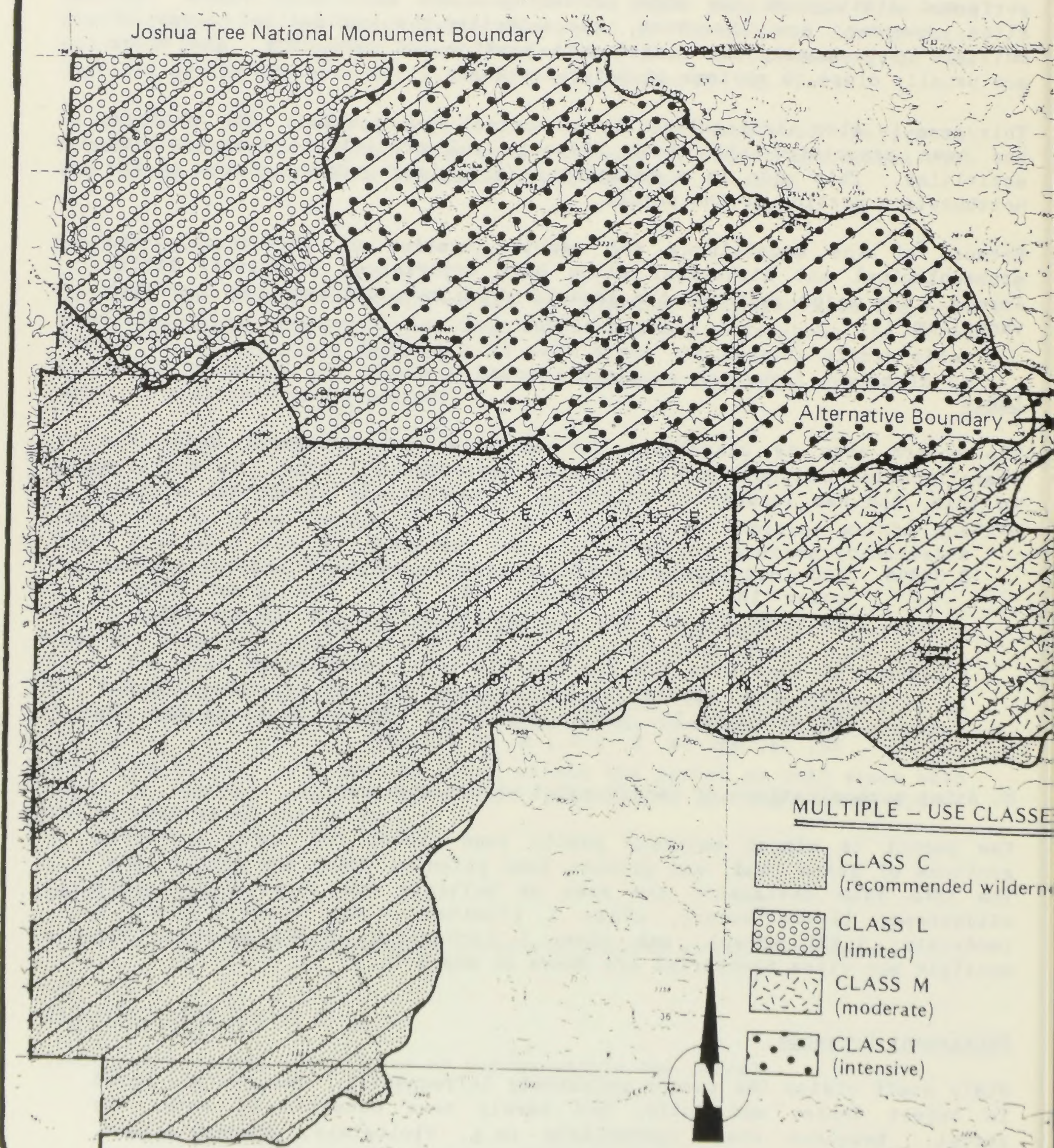
No other authorizations of record exist within the area.

The parcel is almost entirely public land except for three scattered sections of State land, and private land patented under the mining laws. The CDCA Plan designated the area as multiple use class C (proposed wilderness; 19,906 acres), class L (limited; 4,865 acres), class M (moderate; 3,421 acres), and class I (intensive; 9,183 acres). The multiple use class boundaries are shown on map 3-15.

Management Presence

BLM's staff visits the parcel relatively infrequently. Rangers are based in Desert Center and Indio, but rarely have occasion to enter the parcel. Resource staff specialists (e.g. biologists, archaeologists, geologists) visit an area on an as-needed basis: for example, to process a right of way application or a mining plan of operation, or to prepare

Eagle Mountains Alternative
BLM - CDCA Plan Multiple-Use Class Map 3-15



an ACEC management plan. There has been little such activity in the parcel, so visits have been extremely infrequent. In fact, the only regular checks have been associated with the monthly monitoring of the Eagle Mountains WSA.

Recreation

Off-road touring and other vehicle-dependent activities are the dominate recreational uses. The Black Eagle Mine Road, Big Wash, and a handful of lesser open routes of travel provide an outstanding opportunity for sightseeing and four-wheel-drive touring. These motorized travel corridors also provide access for several other activities including quail and chukar hunting, rockhounding, target shooting, and roadside camping.

The potential for primitive, non-motorized types of recreation abounds, but is currently under-utilized. The area's considerable scenic quality and pristine, primeval character lends itself to greater numbers of hikers and backpackers. For these activities the parcel offers a "wilderness experience" in much the same manner and degree as the adjacent designated wilderness located in the Joshua Tree National Monument (JTNM).

Under CDCA Plan gudelines, motorized vehicle use is limited to designated open routes of travel. No closed areas or specific road closures have been designated in the parcel. A mining road that was illegally built across a portion of the Eagle Mountain WSA has been fully reclaimed and no longer exists.

Available access to the parcel is primarily four-wheel-drive, and is provided by two different routes: the Black Eagle Mine Road in the west and the Big Wash route of travel in the south. BLM considers Big Wash to be a primary open route because of the route's recreational value and its' significance as the only other public access to the Eagle Mountains outside of the monument.

Inside the area, public vehicle access is limited to several open short spur routes that branch from either the Black Eagle Mine Road or Big Wash. These routes are mostly mining roads to current or past operations. A much greater concentration of mining roads exists in the northeast corner of the study area where intensive mining activities occur. However, public vehicular access is blocked due to a lack of access through JTNM wilderness and locked gates at private land boundries.

Wilderness

Alternative C recommends that about 30,000 acres be added to the Joshua Tree National Monument. About 70 percent of this area overlaps the Eagle Mountain Wilderness Study Area (CDD WSA 334). A large portion of the included WSA (about 75 percent) has been recommended as suitable for wilderness designation. This suitable area accounts for about 55 percent of the total 30,000 acres.

Most of the Eagle Mountain WSA was recommended as suitable because: (1) the area possesses outstanding wilderness values; (2) it lies adjacent to existing designated wilderness in the monument; and (3) the area possesses many special features that would benifit from wilderness designation.

The rugged envoronment has served as a barrier and therefore man's imprint on the area is negligible. The WSA is a natural extension of the outstanding wilderness valuse found in the monument. Wilderness designation of this WSA would also enhance the bighorn sheep and desert tortoise habitats and protect the sensitive plant species and cultural resources found in the area.

Geology-Energy-Minerals

This alternative includes all of the Pinto Basin described in Alternative A and a portion of the Eagle Mountains. No economically recoverable salable or leasable minerals have been identified in any portion of this area. There are about 2 $^1/_2$ state sections and 800-1000 acres of private land on patented mining claims.

The following discussion considers separately the area within the Eagle Mountain WSA and the non-WSA lands (that is, public lands classified for limited and intensive use). This was done because new information has become available since the completion of the CDCA Plan EIS (U.S. Geologic Survey and U.S. Bureau of Mines reports done specifically for the WSA program), and because the mining history is significantly different between non-WSA and WSA lands.

WSA Lands

Leases and Mining Claims: As of December, 1979 there were nine patented and "numerous" unpatented mining claims in the northern part of the WSA (see table 3-2).

Table 3-2
Mineral Interest Status as of December 1987
Area Within Eagle Mountain WSA

TYPE	NUMBER			ACRES		
MINING CLAIM	SUITABLE	NONSUIT.	TOTAL	SUITABLE	NONSUIT.	TOTAL
Lode	4	61	65	80	1220	1300
Placer	0	0	0	0	0	0
Mill Site	0	28	28	0	140	140
Totals:	4	89	93	80	1360	1440

Mineral Potential Overview: The mineral resources potential of the Eagle Mountains parcel is shown on map 3-13.

The Eagle Mountain WSA is in the BLM Eagle Mountain Geology-Energy-Mineral Resource Area. The wilderness portion of the 1980 CDCA Plan EIS (Volume B, Appendix III) stated that mineral resource data for the WSA had not been fully analyzed, integrated, and interpreted. However, the EIS did state that the WSA had "possible" potential for metals and salable mineral resources.

In 1983, the USGS and U.S. Bureau of Mines (BOM) conducted a mineral survey of the suitable portion of the WSA. The results of the BOM survey were published in MLA 101-83 in 1983, and the joint report by the USGS/BOM in Open File Report (OFR) 84-631 (1984). MLA 101-83 concluded that the geologic features which localized the productive deposits of iron, gold, lead-silver, and copper in the Eagle Mountain mining district appear to be absent within the WSA. However, the USGS and BOM combined report (OFR 84-631), due to the additional sampling and geologic inference, indicated that the geologic environment at Eagle Mountain (similar to the nearby Chuckwalla Mountains, an area of known mineral occurrence and production) is highly favorable for the occurrence of metallic mineral resources (gold, silver, tungsten, molybdenum, bismuth, lead, and copper).

Stream sediment samples also showed anomalous mineral concentrations for lead, bismuth, and tin in the Eagle Mountains WSA. Through the use of geologic, geochemical, and geophysical data and a survey of mines and prospects to classify the suitable portion of the Eagle Mountains WSA, the USGS and BOM concluded in their combined report that those parts of the Eagle Mountains WSA that are intruded by altered mafic dikes (or hornblende porphyry dikes) with associated quartz veins and shear zones have moderate to high potential for the presence of undiscovered gold, silver, and tungsten. High stream-sediment concentrations of molybdenum also suggested that parts of those areas intruded by the dikes contain molybdenum minerals. Almost the entire WSA is classified under the BLM classification system as having a moderate potential for the occurence of gold, silver, tungsten, and molybdenum. Localized areas of high potential for the occurrence of gold and silver resources in the northwest, central, and south central portions of the WSA were also reported by the USGS and BOM.

Non-WSA Lands

Mining History and Exploration: Mr. Jerry Fawcett, Projects Manager for Kaiser Steel Corp., has indicated that Kaiser has several mineral related activities planned for it's Eagle Mountain Mine. These include the following:

1. Intent to sell iron ore to the cement industry for use in the cement manufacturing process.

2. Intent to sign a contract with Draco Mining to have Draco recover gold from the Kaiser Mine. Possible indications of a large low grade disseminated gold deposit suitable for heap leach mining similar to the operation at the Mesquite Mine in Imperial County.

3. Investigation of the possible recovery of gold from the tailings and waste material left from the iron mining.

Draco Mining has been conducting exploration in recent years on it's mining claims between the Pinto Basin WSA boundary and the western limits of the Kaiser Mine. At present there are proposals pending to use the deep pits at this mine as a dump for waste from the Los Angeles Basin. Whether or not such use will adversely impact the known mineral resources at the mine is unknown. Part of this proposed dump area is on lands being considered for this action.

Leases and Mining Claims: Mining interests in the Eagle Mountains parcel are shown on table 3-3.

Table 3-3
Mineral Interest Status as of April 1988
Area Outside Eagle Mountain WSA

TYPE MINING CLAIM	NUMBER TOTAL	ACRES TOTAL
Lode	149	2980
Placer	1	20
Mill Site	43	215
Totals:	193	3215

Mineral Potential Overview: These lands include the area east of Pinto Basin and north of the Eagle Mountain WSA boundary. This area potentially has the highest mineral values of the entire parcel. The Eagle Mountain Iron Mine was operated by the Kaiser Corporation until 1980 when the company went into chapter 11 bankruptcy. Kaiser claims that large reserves of iron ore still exists at the mine and that mining could begin again with improved market conditions. Most of the mine is on patented mining claims owned by Kaiser. The claims were originally staked for gold because of large quartz veins but Kaiser has only recovered the iron ore. Rumors circulated that the mine workers found free gold in quartz samples but the company rejected the idea of recovering the gold.

During informal communication with one of Kaiser's geologists and Bureau staff, it was claimed that Kaiser has had assay sample tests run on its large tailings and waste piles and that good values were returned for gold. This new information by Kaiser has not been substantiated; however, given the mining/exploration history of the area, the mines and patented claims west of this mine, the results of the USGS report for the Eagle Mountain WSA, and the persistance of the rumors it is unlikely that they do not have some basis in fact. If these claims are true there is a high potential for heap leach recovery of this gold (the most economical recovery method under present technology).

ALTERNATIVE D: MODIFIED PYRAMID PEAK PROPOSAL

The affected environment for botany, livestock grazing, wild horses and burros, cultural resources, management presence, recreation, and water is the same as described for Alternative A: Parcel Three.

Wildlife

The affected environment is the same as in Alternative A: Parcel Three except that additional land in the foothills of the Funeral Mountains would be managed by the DVNM.

Lands

This parcel totals 16,116 acres, an addition of approximately 3,800 acres of public land in the northeast portion and deletion of approximately 590 acres of State land and 340 acres of public land in the southern portion when compared to Alternative A: Parcel Three. Approximately 15,282 acres (94.8 percent) are public lands, 3.7 percent (594 acres) are State lands, and 1.4 percent (240 acres) are privately owned.

There are no additions of non-federal lands, rights-of-way, or other surface authorizations of record beyond those described for Alternative A: Parcel Three.

The CDCA Plan designated public lands in the Pyramid Peak parcel as multiple use class C (proposed wilderness; 15,926 acres) and class M (moderate use; 1,461 acres)(see map 3-16).

Wilderness

The additional land recommended for transfer in Alternative D is within the suitable portion of the Funeral Mountains WSA. Otherwise, there are no differences between Alternative D and Alternative A: Parcel Three.

Geology - Energy - Minerals

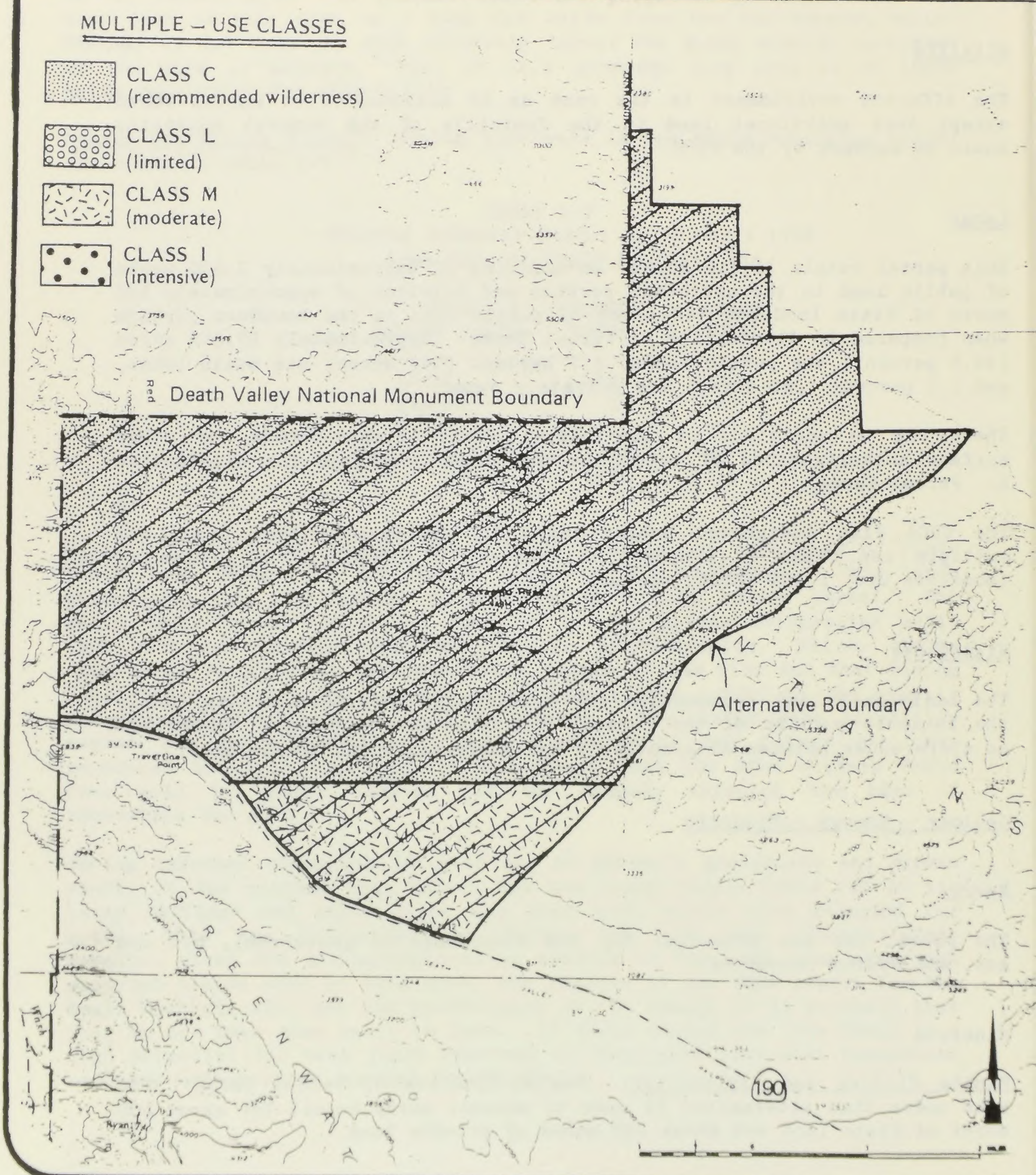
Energy

The parcel has low potential for the occurrence of geothermal, oil and gas, and sodium resources.

Minerals

Mining History and Exploration: See Alternative A, Parcel Three. The area under this alternative is open to mineral entry except for about 600 acres of State land and about 240 acres of private land.

Pyramid Peak Alternative
BLM - CDCA Plan Multiple-Use Class Map 3-16



Leases and Mining Claims: There are no mineral leases within the study area. There is one unpatented mining claim and one mill site claim. These are located in the eastern portion of the parcel.

A 160-acre patented mining claim is located in the western part of the parcel. There is no recorded production from this property, which is owned by U.S. Borax.

Mineral Potential Overview: Most of the parcel has moderate to high potential for the occurrence of mineral resources.

Sand and Gravel: About $1^1/_4$ square miles in the southern part of the parcel have a high potential for the occurrence of sand and gravel. This is based on the similarity of these deposits to a past extraction site $5^1/_2$ miles to the southeast where Caltrans has removed about 30,000 cubic yards of aggregate for the maintenance of Highway 190.

Bentonite and Zeolite: Nearly five square miles in the northeast part of this parcel has moderate potential for the occurrence of clay (bentonite) and zeolite. This area is underlain by Tertiary-age tuffaceous sedimentary rocks which contain concentrations of bentonitic clay and minor zeolites. Currently, bentonite is being produced at the Sidehill mine four miles to the east (Taylor, 1986, p. 32).

Limestone: About nine square miles in the northern and north-central part of this parcel has moderate potential for the occurrence of limestone. These areas contain carbonate rock that is predominantly limestone of Devonian to Mesozoic age. Although there has been no production from this area, these formations and similar-age formations have recorded production elsewhere in the Mojave Desert and, as a consequence, could contain important resources of carbonate rock (Taylor, 1986, p. 33).

Dolomite and Silica: About $4^1/_2$ square miles in the central to north-central part of the parcel have moderate potential for the occurrence of dolomite and silica (quartzite). This area contains carbonate rock that is predominantly dolomite of Precambrian to Silurian age. Carbonate rocks of equivalent ages have produced dolomite in other areas of California and, as a consequence, this area could contain resources (Taylor, 1986, p. 33) as shown in California Division of Mines and Geology Bulletin 194 (Bowen, et al., 1973).

Boron (Borates): About $2^1/_2$ square miles in the western and southern part of the parcel have moderate potential for the occurrence of borates. This area is within a broad zone which encompasses several areas known to contain identified borate reserves, and the assumption of a moderate potential represents a synthesis of both published and proprietary company data regarding the delineation of a zone deemed to be favorable for borate mineralization (Taylor, 1986, p. 34). The U.S. Geological Survey has classified this area as having moderate potential for the occurrence of borate resources since undiscovered deposits of considerable size may be present in this area (Armstrong, et al., 1987, p. A9).

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

CHAPTER IV

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter provides the scientific and analytic basis for the selection of the preferred alternative. It discusses the significant impacts that would result from both transfer and retention of each of the parcels. Both the beneficial and adverse effects are presented. Knowledge of the area and professional judgement (based on observation and analysis of similar conditions and responses in similar areas) have been used to estimate effects where data is limited.

The analysis is based on the following assumptions:

1. Death Valley would form an ad-hoc management evaluation team shortly after the transfer to evaluate the parcels. After consultation with BLM, and after observing the level of use of each parcel, an evaluation of staffing and funding needs would be developed.

   For the purposes of this analysis, it is assumed that, if the parcels were transfered, Death Valley National Monument's permanent staff would be increased by an amount proportional to the increase in the size of the monument (about 11 percent). New staff could include two equipment operators (for road and trail maintenance), three positions for patrol (one in the north, one for Greenwater Valley, and one for Hunter Mountain), a resource management specialist, an archaeologist, and a ranger.

2. Joshua Tree National Monument would not require any staff increases.

3. Baseline data are accurate.

Within each parcel analysis, the discussion is organized by resource (e.g. wildlife, cultural resources, geology-energy-minerals). Only those resources that would be affected are discussed. A resource that is not expected to be affected is not addressed.

ALTERNATIVE A: PROPOSED ACTION

Parcel One: North Death Valley

Wildlife

There would be both negative and positive impacts on wildlife. In general, habitat conditions would improve slightly due to continued feral burro removal, especially in the Sand Spring and Little Sand Spring areas. Management of the Death Valley ecosystem would be more consistent under one agency.

Riparian and aquatic habitats at Sand Spring would continue to be protected through the use and maintenance of the existing fence at Sand Spring. This fence was constructed in 1984 by the BLM. The Park Service would provide protection for riparian and aquatic habitat at Little Sand Spring by removing burros and cattle rather than by constructing a fence (Essingnton, personnal communication). This would be effective in protecting the springs, but only if NPS removal efforts are frequent and effective enough to keep out burros. Should burros be effectively eliminated from these two springs, burro use of adjacent mountainous habitat in the Last Chance Range would be greatly reduced, as would drift into the present monument (especially in the Grapevine Springs area).

Bird diversity and abundance at Sand Spring may decrease because the existing, dug pond would probably be filled in and allowed to revert to a more natural condition (i.e. a zone of riparian vegetation with perhaps some shallow surface water). This pond has been recently cleaned and slightly enlarged by the BLM.

The newly constructed bighorn guzzler or water catchment located about three miles west of Sand Spring in the Last Chance Range is considered a habitat improvement by the Bureau of Land Management. This guzzler would receive normal maintenance, but would be permanently abandoned if destroyed by a natural catastrophic event such as a rock slide or flash flood. This could result in a lower bighorn sheep population, especially on the east slope of the northern Last Chance Range due to the absence of water. Additional guzzlers would probably not be constructed in the parcel due to the management policy of the National Park Service. As a result, the bighorn population in the area would likely stabilize at more natural levels, and the BLM goal of 150 animals in the range as a whole may not be obtainable. At the present time the percent of the overall bighorn population that could be supported by habitat in the parcel is unknown. It is unlikely that a significant percentage of the existing population of 100 animals (Bureau of Land Management 1988) occurs within the parcel. In the absence of survey data, it is believed that about 10 bighorn presently occupy this area.

Some wildlife management activities of the California Department of Fish and Game would continue under National Park Service management. Most activities could continue as under the present or No Action situation. These include wildlife surveys such as aerial and ground census of bighorn sheep, reintroduction of native wildlife into suitable habitat under appropriate circumstances, and wildlife investigations such as the study of wildlife population dynamics, incidence of diseases, and non-manipulative research.

Guzzler construction, hunting and trapping would not be allowed. Due to this restriction the average annual harvest of six mule deer within the parcel would drop to zero. Hunting and trapping are activities considered contrary to the purposes for which national parks and monuments were established, namely the preservation the natural and cultural environment and interpretation of these values to the public.

Public lands and the wildlife found on them are the common property of all citizens of the United States. In most cases, the Federal government has chosen to manage wildlife cooperatively with State governments.. The BLM has developed such a cooperative management policy with the California Department of Fish and Game. The State, though, does not "own" wildlife on Federal lands, and therefore would not suffer the loss of any existing jurisdiction through a transfer to the Park Service. Concern that a transfer would affect State jurisdiction over wildlife and, therefore, that it would be an infringement of "states rights" is misplaced.

Botany

Under Park Service management, as part of the Death Valley National Monument, there would be a slight positive effect on the Big and Little Sand Springs UPA and rare plant population. The exclosure of Big Sand Spring would be completed by the Park Service as planned by the BLM. All of the exclosures would be maintained, although the burro removal program might eventually preclude their necessity. The protective exclosure would not be removed until the Park Service was absolutely certain that all burros had been removed from the area (Rowlands, personnal communication).

The Park Service has indicated that eventually they would attempt to return Big Sand Spring to its original state, as it was prior to livestock grazing (Rowlands, personnal communication). This action would require the backfilling and leveling of the stock watering pond, which has recently been developed for migratory bird use. Removal of the pond would enhance the present wet meadow by a greater distribution of surface water.

Potential impacts to the Sodaville milk vetch and the UPA as a whole from mining activity would be curtailed under the stricter regulations imposed by the Mining in the Parks Act. The current millsite claim, which includes Big Sand Spring and some of the rare plant population, would be subject to a validity exam. If determined valid, the millsite claim would have little value with Park Service control of the surface water.

Any changes in grazing practices imposed by the Park Service should have no effect on the botanical resources in north Death Valley. Implementation of the proposed ACEC plan by the Bureau of Land Management has adequately protected the UPA and rare plant population within the grazing allotment.

North Death Valley would receive more public use as a part of the monument, especially with continual road maintenance. Increased impacts to the UPA and rare plant population from the public, though, should be alleviated by the greater law enforcement presence afforded by the Park Service.

Livestock Grazing

Impacts to grazing would occur in two phases. The first phase would be similar to the no action alternative. This is because grazing is considered a grandfathered use. As a grandfathered use, the current grazing lease would be honored within the lifetime of the original permitee, or ten years from the date of accession, whichever occurs first. At the discretion of the NPS, an allotment management plan could also be implemented in the parcel. As a result, the short term impact of the proposed action would be minimal on the livestock use in the area.

Under the second phase (after the current lessee relinquishes the lease or he dies), livestock grazing would be eliminated from the North Death Valley parcel. Livestock grazing is considered to be noncompatible with National Park Service purposes and values and would be phased out. The implementation of this alternative would result in the following impacts on grazing:

1 Less than 100 AUMs of preference would be lost. This would result in either a cut in the livestock stocking rate or increased use on the remainder of the allotment.

2 Cattle would trespass onto the North Death Valley parcel as they move between the remaining portion of the Last Chance Allotment and the Magruder Mountain Allotment (Nevada) and as they drift south off the Last Chance Allotment.

Wild Horse and Burro

The transfer would have no effect on wild horse and burro plans for the North Death Valley parcel. The current policy of removing all burros would be continued.

Cultural Resources

While agency mission and policy may vary, both BLM and NPS are mandated to follow Federal statute and regulation in consideration of any proposed action which may impact cultural resources. For this reason, and in accordance with the provisions of a Programmatic Memorandum of Agreement among the President's Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the Bureau of Land Management, transfers of land from BLM jurisdiction to other Federal agencies are determined to have no effect on cultural resources. The transfer is regarded as an administrative action which in and of itself would not result in impacts on cultural resources.

Cultural resources are a non-renewable resource, and by their very nature are in a constant state of deterioration due to natural processes. The impacts to cultural resources normally discussed in environmental documents are those that are caused either directly or indirectly by human action. A comparative analysis of impacts on cultural resources normally discusses the relative levels of human influence on cultural resource properties.

NPS would continue BLM's program of removing wild burros from the North Death Valley parcel. Impacts on cultural resources caused by excessive burro use would lessen to a degree determined by the frequency and effectiveness of the Park Service program. Eventual removal of livestock from the area would also result in a minor lessening of livestock-related impacts on cultural resources. Regulation of mining under current NPS policy is more restrictive than similar BLM management; the concomitant decrease in mining activities would lessen potential effects on cultural resources. Impacts may occur through unrestricted public access to cultural properties, especially from OHV activity, camping, illicit collecting, and vandalism. While these activities occur on all of the parcels, no data are available on the specific level of impact on cultural resources. Due to the small amount of public use of this parcel, overall impacts would be low. Because NPS's patrol frequency would be greater than BLM would provide (three to four times per week rather than twice weekly), NPS would be more successful in controlling public access to the lands within the parcel, and impacts on cultural resources from these activities would decrease.

Lands

There would be no effect on third party authorizations (e.g. rights of ways) since none are present. Existing classifications are withdrawals which would be consistent with NPS management.

Transfer of land administration from the BLM to the Park Service would have no effect on the National Wildlife Federation-related preliminary injunction order. The agency currently (or subsequently) administering the land would be bound by the terms of the order. Upon transfer of the parcel, and expected administrative endorsement of the area as wilderness, NPS management actions (non-federal land acquisitions, restrictions on permits) would not be inconsistent with the specific terms of multiple-use classification R-697. NPS would simply inherit the classification and could not revoke it or take actions inconsistent with it.

Noise and visual impacts associated with existing military aircraft operations are expected to continue, as the Department of Defense (DoD) airspace users would not agree to modify the current 200-foot AGL over the transferred lands. Self imposition of a 3000-foot above ground level (AGL) floor over the transferred lands is considered by DoD to have an unacceptable adverse impact on military flight operations and training requirements.

The proposed action would be inconsistent with the Inyo County plan which calls for open space and multiple use management of this area.

Management Presence

The parcel would be patrolled by the Grapevine (North) Ranger District three to four times per week. This would double the frequency of patrol currently provided by BLM's expanded ranger force, and would be significantly greater than the once monthly rate of patrol that the Bureau was able to provide in the past.

Resources staff specialists likely would visit the parcel for spring surveys once per year, and at other times on an as needed basis. This would not be a significant increase over time presently spent in the parcel by BLM resources staff.

Recreation

The major differences in types of recreation activities allowed on the North Death Valley parcel (BLM as opposed to NPS management) are summarized in Table 4-1. These changes would not be significant due to the relatively low visitation to the parcel. Consumptive recreational pursuits such as hunting, trapping, and rockhounding (estimated at about 500 visitor use days) would not be allowed under National Park Service management. These types of recreation would be displaced to BLM areas outside of the parcel. Recreational pursuits compatable with National Park Service managment, such as hiking and backpacking, would benefit slightly due to the lack of competition with more consumptive recreational pursuits.

Wilderness

The Saline Valley WSA (117) and Little Sand Spring WSA (119) have been preliminarily recommended as suitable for wilderness designation. These two WSAs directly border Death Valley National Monument lands that have been administratively endorsed as wilderness since December, 1974. Congressional action on the BLM and NPS recommendations would most likely be reviewed as separate actions. Until these recommendations are acted upon, any WSA lands transfered to NPS jurisdiction would be managed to protect wilderness values, subject to the Death Valley National Monument General Management Plan.

No wilderness qualities would be impaired as a result of NPS managment policies.

Geology-Energy-Minerals

General Discussion: Certain management aspects of the transfer would affect all five of the parcels in the same manner. A discussion of these follows. The discussion applies not only to the North Death Valley parcel, but to the other four parcels as well. Mining activity would be regulated under the 36 CFR 9.A regulations, resulting in the following:

a. The unavailability of the land for mineral location and entry would preclude the possibility of the discovery and development of unknown mineral resources. The overall effect would be a loss of revenue and tax base to the State and counties, increased dependence on outside sources of mineral commodities and the intensification of exploration activity on the surrounding lands.

b. Because new surface disturbance greater than that existing at the time of acquisition would not be allowed, incremental development of the mining claim could not occur. For example, if a mining claim has sufficient exploration and development to warrant a favorable validity determination, but no existing significant surface disturbance for the purpose of mineral extraction, the NPS Regional Director could not approve a plan of operation.

   The overall surface disturbance and potential surface disturbance would be reduced, but at a loss to future development and production.

c. Mandatory bonding would result in a greater degree of protection for the surface. Economic impacts to the monuments would be less should claimant/operator default and fail to perform adequate reclamation. Claimant's operating costs would increase.

Table 4-1

Comparison of Management Restrictions on Recreational Resources BLM and NPS Jurisdiction

BLM

1. OHV (licensed and "green sticker" vehicles) are allowed on existing routes not signed closed. No crosscountry travel allowed for OHVs.

NPS

1. Licensed vehicles (no "green sticker" registered vehicles) are allowed on designated roads. No crosscountry travel allowed.

BLM

2. Camping with vehicles is allowed within 300 feet of existing roads. No camping within 600 feet of livestock or wildlife watering sites. Camping limited to 14 days per month.

NPS

2. Death Valley has two camping zones which are clearly identified in a brochure provided to park visitors. The first zone includes areas within one mile of paved and other major roads, and areas within five miles of the desiganted campgrounds. Camping in this zone must be within designated campgrounds.

   The great majority of the monument falls in the second zone. Here visitors may camp in their vehicle along designated roads and/or at pull-outs as long as they are $^1/_4$ mile from a wildlife watering site. Visitors may also camp anywhere they wish to walk in the backcountry except around waterholes.

   Camping is limited to 30 days except in Furnace Creek and Mesquite Campground which are limited to 14 days.

   Within Joshua Tree, camping is allowed only in areas at least one mile from access roads.

BLM

3. Pets are allowed with no restrictions outside of developed campgrounds.

NPS

3. Pets must be on leash or physically controlled at all times. No pets are allowed beyond 1/4 mile off paved roads. No pets allowed in the backcountry.

Table 4-1 (con't)

Comparison of Management Restrictions on Recreational Resources
BLM and NPS Jurisdiction

BLM

4. Hunting, trapping and target shooting allowed under state/local restrictions.

NPS

4. No firearms, archery equipment, etc., are allowed; all such devices must be broken down and out of view while on NPS lands.

BLM

5. Rockhounding and vegetative byproduct (firewood, pinyon nuts and cones, flower blooms, etc.,) collection for personal use is allowed (firewood collected while camping must be used on site; no home use collection allowed except under special authorization sales).

NPS

5. No collection of minerals, rocks, or vegetative byproducts for personal use is allowed, except as provided by the NPS Native American Relationships Management Policy (e.g. pinyon nut collection). Scientific collection allowed under specific NPS permits.

Many smaller operators would fail to secure the necessary capital and meet the minimum financial requirements necessary in order to secure a bond. The expenditure of personal income to post a cash bond or certificate of deposit may result in additional operator costs. An operator with a break-even or slightly positive cash flow may not be able to operate at a profit.

d. The notice of intent to hold requirement would result in less surface disturbance on the claim. However, the incentive provided by the assessment requirement to pursue diligently the development of the claim would be removed. Non-disturbing types of assessment work, such as geological, geochemical and geophysical surveys could be used to further define and develop the mineral resources of the claim.

e. The transfer would affect mining claims only in cases where insufficient exploration or lack of discovery invalidate the claims.

f. Although the creation of new access would not be curtailed where the operator is working on a valid claim under an approved plan of operation, the transfer would, however, place an additional financial burden on the operator/claimant, in the form of a fee.

   This requirement differs from present management, under which the right of access across public lands is guaranteed and does not require the filing of a notice of intent or a plan of operations unless surface disturbance would occur.

g. Water use would not be allowed unless certain criteria are met. This would result, for new operations, in the inability of the claimant to develop existing water sources, resulting in increased costs for hauling and storage of off-site water.

   This would occur unless the claimant could show perfection of water right under state law, and unless he could demonstrate that the claimant's water rights are senior to the water rights of the United States or, if junior to those rights, that the use of water would not diminish the Federal right (36 CFR 9.8). Under present regulations (43 CFR 3802/3809), mining claimants have a right to use water on public lands for mining purposes. Given the arid condition of the desert, it is highly improbable that a claimant with water rights junior to the United States could show that use of the water would not "diminish the Federal right." Loss of water would be critical to operations requiring water to mine and process ore.

h. The right to appeal to the Interior Board of Land Appeals (IBLA) would be lost. Appeal of any decision by a Park Service Regional Director that is adverse to a claimant is made directly to the Director of the Park Service in Washington D.C. This appeal is the final administrative appeal and any further appeal would be to the courts (36 CFR 9.14). Under 43 CFR 3802/3809, claimants have a right to appeal decisions of the Bureau directly to the IBLA. Since IBLA decisions are binding on the Bureau, claimants who are successful in their appeal at this level would not incur any additional legal fees.

The differences between the Park Service and the BLM procedures would cause a very significant increase in overhead costs of starting and continuing mining operations in a park unit. More stringent reclamation and road charges computed on a ton-mile basis, perfection of water rights (and in most cases the cost of hauling water to a mining sites where water rights cannot be perfected), mandatory bonding, and the added legal cost of any appeal would cause such significant overhead cost increases to any operation that only the most highly mineralized areas would be profitable for mining.

North Death Valley Parcel: The potential for future development of mineral resources such as gold, silver, mercury, sulphur, gypsum, limestone, molybdenum and borates may be reduced or eliminated.

The potential loss of revenue and tax base for the County of Inyo cannot be determined at this time due to the lack of specific reserve estimates associated with the above mentioned mineral commodities.

Of particular concern is the potential loss of the strategic minerals. Table 4-2 lists those elements and minerals considered strategic by the U.S. Bureau of Mines. In particular, there would be a potential loss of the identified strategic minerals lead and silver from this proposal.

Parcel Two: Hunter Mountain

Wildlife

Under the proposed action there would likely be enhancement of habitat conditions for wildlife due to the eventual elimination of livestock grazing, elimination of unrestricted vehicle camping along the Hunter Mountain road, greater control and regulation of mining in the area east and north of Spanish Spring, and a continuing program of burro and horse removal. Eventually, livestock grazing in the parcel would be eliminated. Mule deer population structure and perhaps density would reach natural levels through the elimination of hunting.

As a result, the Hunter Mountain ecosystem would receive greater protection. In addition, wildlife resources, especially bighorn sheep, would be afforded more consistent, long term protection through the elimination of livestock grazing.

Livestock grazing would be allowed to continue under controlled conditions for a considerable period of time. Typically, the National Park Service would allow cattle grazing to continue though the lifetime of the original or current lessee or until the lease privileges are relinquished, whichever occurs first. During this time wildlife habitat and populations would be enhanced over the existing situation because the following actions would likely be implemented:

1. Prevention of the drift of cattle from the parcel into Death Valley National Monument.

Table 4-2
List of Strategic and Critical Minerals and Metals [1]

Commodity	Strategic [2] Rating
Antimony	SX
Arsenic	X
Asbestos	SX
Barite	X
Bauxite and Alumina	X
Beryllium	S
Bismuth	SX
Cadmium	SX
Chromium	SX
Cobalt	SX
Columbium	SX
Copper	S
Diamond (industrial)	SX
Fluorspar	SX
Germanium	S
Graphite	SX
Iodine	SX
Lead	S
Manganese	SX
Mercury	SX
Mica (sheet)	SX
Nickel	SX
Platinum (group)	SX
Potash	SX
Quartz Crystals	S
Rutile	S
Silver	X
Strontium	X
Talc, Steatite Block and Lump	S
Tantalum	SX
Tin	SX
Titanium	S
Tungsten	SX
Vanadium	S
Yttrium	X
Zinc	SX

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[1] U.S. Bureau of Mines

[2] X = Net import reliance of 50% or more in 1987.
S = On National Defense Stockpile List (09-30-87)

2. Livestock use of the parcel could not be increased, and periodic monitoring of key habitats and the ecological condition of the parcel would be conducted by BLM and NPS personnel to determine if restrictions on cattle grazing were needed to prevent unacceptable impacts to the environment.

3. New range improvements proposed for installation within the parcel would require the concurrence of the Superintendent of Death Valley National Monument.

Cattle are not indigenous to the area because they do not occur here naturally. They have been placed in this ecosystem by man. The burro is another exotic species that was introduced into the area by man.

The eventual elimination of cattle grazing in the parcel would enhance or improve the natural environment, and result in the termination or a great reduction of cattle drift into riparian and aquatic areas on the east slope of Hunter Mountain, especially in Cottonwood Canyon, all within Death Valley National Monument. In addition, cattle use of the prime bighorn sheep habitat in the lower Grapevine Canyon and Dodd Springs area would be eliminated. It is highly likely a livestock drift fence would be constructed in Grapevine Canyon, which would prevent livestock access into the parcel. The result of this would probably be reduced stress on native ungulates, reduced competition for water, elimination of water contamination by cattle excrement, and elimination of cattle trampling damage to riparian habitats.

The concern over the transmission of fatal or debilitating viral diseases to the bighorn population would be greatly reduced. Due to the potential significance of viral diseases common to cattle that bighorn can acquire, additional discussion on this subject follows. Also see an expanded discussion on this subject in Chapter 3 (affected environment).

The eventual elimination of cattle from the parcel, and probably Grapevine Canyon, may greatly reduce the potential for bighorn mortality due to diseases. According to Wehausen (1986), the incidence of two viral disease indicators in the bighorn population in the Old Woman Mountains, a desert mountain range in San Bernardino County, is the result of cattle being the reservoir of infection on a year-round basis. In addition he cites the work of other authors in stating that "...cattle commonly carry bluetongue (and presumably also its close relative epizootic hemorrhage disease) in a chronic form, with little influence on their health...". These viral diseases common to cattle are transmitted by biting gnats, and therefore overlap of bighorn and cattle distribution is not required for disease transmission (Wehausen 1986).

Eventual removal of cattle from the parcel may enhance conditions for mule deer. There is a potential for cattle to displace deer when the two animals occur in the same area (Mackie 1981, Ashcroft 1980, Nelson 1979). Current livestock practices in the parcel have the potential for causing cattle to compete with deer for spring-season forbs and grasses (Mackie 1981).

Over a long period of time, however, the absence of grazing animals (cattle and horses, primarily) in the parcel may result in the habitat becoming less desirable for mule deer (Gruell 1986). Mule deer prefer habitat with adequate browse (certain species of shrubs). Grazing animals have the ability to deplete bunchgrass from the habitat, thus favoring browse species. The degree of expected change in bunchgrass and browse is unknown as is the length of time needed for such a change to occur. However, since the present range condition of the parcel is fair (Bureau of Land Management 1980), it is likely the grasses have been significantly depleted and that grazing animals are utilizing browse species to a greater extent than if the range was in good or excellent condition.

Eventual removal of cattle and the removal of all burros and horses from the parcel would result in enhance ecological conditions. At present, a small number of burros are allowed to remain in upper Grapevine Canyon. The NPS would remove all horses and burros. In 1980, the overall range condition for the Hunter Mountain Allotment, which includes parcel two, was rated as fair, indicating the existence of undesirable conditions related to plant production, soil erosion, ground cover, consumption of key forage species and invasion by undesirable plant species (Bureau of Land Management 1980). Natural habitat conditions would eventually recur due to the absence of livestock and burros.

Naturally occurring fires would be allowed to influence the area. Naturally occurring fires have the potential of enhancing wildlife habitat conditions, especially in pinyon pine and juniper forest habitats, provided they remain relatively small, do not destroy riparian vegetation, and randomly occur throughout the area. Such fires also would likely enhance habitat conditions for mule deer and bighorn sheep by allowing grasses, forbs and browse to invade openings in the pinyon and juniper forests.

The parcel likely would not contain the range improvement projects that could be installed under the no action alternative. Such projects include cattle drift fences, cattle watering troughs, water tanks, and corrals. The exact type and location of such facilities would be specified in the allotment management plan for the area. The absence of these projects may allow for more natural wildlife movements and use patterns in the parcel.

Habitat enhancement projects for wildlife, especially huntable species, would generally not be allowed, resulting in the possible "loss" of surface water for bighorn sheep at some sites due to springs becoming overgrown by dense vegetation or water being used directly by the plants through transpiration.

Burros may be responsible, in some areas, for maintaining access to surface water at springs that are required or favored by bighorn sheep. This may be the situation at Big and Little Dodd Springs (Aardahl, personal communication). However, the National Park Service may identify certain natural water sources as critical watering sites needed to maintain a viable bighorn sheep population and, therefore, allow a minimal degree of modification to maintain water for bighorn (Rowlands, personal communication).

Habitats for the slender salamander (if it occurs in the parcel) and the Panamint alligator lizard would be enhanced due to the eventual elimination of cattle and burros from riparian areas such as Grapevine Canyon. At the present time the degree of impact on these habitats has not been quantified, but evidence of trampling by cattle and burros exists.

Conditions for other species such as the Panamint kangaroo rat, raptors and upland game birds may or may not change. Little is known about these species on the parcel. The habitat for these species would be enhanced by management under the proposed action. One potential use that could have a significant effect on these species, as well as others, is mining. This could include vehicle use, drilling and blasting, ore removal and milling, and on-site residences. Mining uses would be regulated to a greater degree and, therefore, would be less impacting on the habitat in general.

For the effect on wildlife management programs of the CDFG refer to the analysis of parcel one.

Livestock Grazing

Impacts on grazing would occur in two phases. The first phase would be similar to the no action alternative. This is because grazing is considered a grandfathered use. As a grandfathered use, the current grazing lease would be honored within the lifetime of the original permitee, or ten years from the date of accession, whichever occurs first. The draft Hunter Mountain Allotment Management Plan could be finalized and could, at the discretion of the NPS, be implemented in the parcel. As a result, the short term impact of the transfer would be minimal. Resource conflicts around riparian areas and cattle encroachment onto the existing DVNM may continue because structural range improvements may not be constructed to support a grazing use that is being phased out.

Cattle use could be eliminated from most of the remainder of the allotment, depending on whether or not the NPS would authorize continued diversion of water through the Hunter Mountain Pipeline (see below).

Under the second phase (after the current lessee relinquishes the lease or he dies), livestock grazing would be eliminated within the Hunter Mountain parcel. Livestock grazing is considered to be incompatible with NPS purposes and values and would be phased out. The implementation of this alternative would result in the following impacts on grazing:

1. About 450 AUMs of forage would be lost. This would result in either a cut in the stocking rate or increased use on the remainder of the allotment.

2. Cattle would trespass onto the Hunter Mountain parcel unless a fence is constructed along the boundary in Grapevine and Mill Canyons. Such a fence would be approximately eight miles long and cost around $40,000.

3. Cattle use could be eliminated from the allotment depending on whether or not the NPS would authorize continued diversion of water through the Hunter Mountain Pipeline. The Park Service has indicated that water diversions (such as the Hunter Mountain Pipeline) would continue to function and that the permittee would be allowed to maintain the pipeline. In that case, there would be no water-related impacts on the Hunter Mountain allotment.

   If the permittee is not allowed to maintain the pipeline and its source, then the only permanent sources of water in the remaining part of the allotment would be eliminated. This would eliminate grazing on the Hunter Mountain Allotment. The permittee acquires approximately 40 percent of his total forage needs from the Hunter Mountain Allotment. Alternate grazing areas are not available in the Owens Valley area; thus, the permittee would have to cut his herd down (probably about 50 percent) to match the carrying capacity of private lands and leases. The permittee has stated that a cut of this magnitude would destroy the his entire livestock operation because it would cease to be an economic operation.

Wild Horse and Burro

The transfer would have an impact on wild horse and burro plans for the Hunter Mountain parcel. Under current management plans, burros located in upper Grapevine Canyon are part of the Lee Flat Herd Management Area and are slated for retention. Under NPS plans, all of the horses and burros found on NPS lands could be removed. Wild horses and burros on the remainder of the parcel are slated for removal. Under NPS jurisdiction there may a change in the way burros are removed as the NPS is not constrained by the Wild Horse and Burro Act. Removal options the NPS has used include capture and direct reduction (i.e. shooting).

Cultural Resources

The impacts on the Hunter Mountain parcel would be identical to the discussion for parcel one with the following exceptions. In addition to burros, the continued removal of wild horses from the parcel would result in a minor lessening of impacts on cultural resources through trampling.

Collection of pinyon nuts by Native Americans for personal use or consumption will be allowed on Hunter Mountain (Hopkins, personal communication). Further, persons other than Native Americans may also collect pinyon nuts. The Park Service's Native American Relationships Management Policy states the following:

> "In accord with 36 CFR 2.1(c)(1) the Superintendent may designate certain fruits, berries, nuts or unoccupied seashells that can be gathered by hand for personal use of consumption upon a written determination that the gathering will not adversely affect park wildlife, the reproductive potential of a plant species, or otherwise adversely affect park resources."

The policy further states that the Superintendent shall provide reasonable access to Native Americans for the pursuit of religious activities to the extent permitted by provisions of NPS Management Policies on Religious Activities VII-18 and Public Assembly VII-21 to 23.

The Park Service, therefore, would not restrict access for the purposes of traditional use. Gathering by non-mechanical means for personal consumption would still be allowed under NPS management. One particular concern, however, has been the methods used to travel to pinyon harvesting areas. There is a possibility that the Park Service would limit vehicular use more severely than does BLM. In this sense access, while permitted, could become more difficult.

Lands

With the exception of Inyo County's possible interest in the east-west dirt road, there would be no impact on third party authorization since there are none. The road in question could not be enlarged. Existing classifications are withdrawals which are consistent with NPS management.

Transfer of land administration from the BLM to the Park Service would have no effect on the National Wildlife Federation-related preliminary injunction order (see parcel one discussion). NPS would simply inherit the R-1250 classification and could not revoke it or take actions inconsistent with it.

Noise and visual impacts associated with existing military aircraft operations are expected to continue, as the Department of Defense airspace users would not agree to modify the current 200-foot AGL over the transferred lands. Self imposition of a 3000-foot AGL floor over the transferred lands is considered by DoD to have an unacceptable adverse impact on military flight operations and training requirements.

The proposed action would be inconsistent with the Inyo County plan which calls for open spaces and multiple use management of the area.

Management Presence

The parcel would be patrolled by the Grapevine (North) Ranger District two to three times per week. The patrol would probably be by the monument's current Racetrack Valley patrol, and would enter the parcel from the east by way of the Hunter Mountain road. This would be about the same as the frequency of patrol currently provided by BLM's expanded ranger force, although it would be somewhat greater than the once weekly rate of patrol that the Bureau was able to provide in the past.

Resources staff specialists likely would visit the parcel for spring surveys once per year, and at other times on an as needed basis. This would be about the same frequency as presently provided by BLM resources staff.

Recreation

Long term recreational use of the Hunter Mountain parcel would definitely change under NPS managment. The loss of about 1,500 visitor use days of hunting, rockhounding and plant byproduct collection opportunities (such as pinyon nuts and flower blooms) would be the most severe impact on recreation (total recreation use estimated at 2,800 user days). The major differences in the types of recreation activities that would be allowed on the Hunter Mountain parcel by BLM and NPS are summarized in Table 4-2.

It is not known what impact NPS management would have upon the vehicle access in the Hunter Mountain parcel. No official NPS plans exist for the BLM portion of Hunter Mountain. Some primitive campsites accessable by vehicle might be allowed. The development of a primitive campground in the area would be in keeping with the DVNM General Plan's emphasis on providing more higher elevation camping opportunities for summer time visitors (page 36, DVNM General Plan).

Wilderness

The impacts on wilderness study areas if the two BLM WSAs were to transfer to NPS jurisdiction would be the same as for the North Death Valley parcel.

Geology-Energy-Minerals

The transfer of this area to Park Service management would cause significant negative impact on future mineral exploration or development of the area. Under Park Service management minerals would no longer be managed under the unnecessary or undue degredation provisions of 43 CFR 3809 and 3802 but under the more restrictive measures of 36 CFR 9.A that are the Park Service's regulations for mining in a park or national monument. A general discussion of these impacts can be found in the GEM analysis for parcel one.

In addition to the effects of transfer previously discussed, the potential for future development of mineral resources such as gold, silver, lead, zinc, molybdenum, copper, limestone and wollastonite may be reduced or eliminated. Of particular consequence is the potential loss of the strategic minerals copper, lead, silver, and zinc that have an identified potential for occurrence in the Hunter Mountain parcel.

In 1985 Moore and Tabor drilled five exploratory drill holes for NYCO, a major wollastonite producer in New York State on the Hunter Mountain wollastonite (J.O. property claims). Detailed results of the drilling program are confidential, but, in general, two million tons of proven reserves of 85 to 90 percent wollastonite ore were identified during the drilling program (Don Clark, Tabor & Moore, personal communication, 1988). NYCO dropped the options on the property due to the adverse environmental climate. According to Mr. Clark NYCO had examined a dozen properties worldwide and found the resource at the Hunter Mountain deposit to be an order of magnitude better than any other evaluated.

A deposit with a proven reserve base of two million tons and an inferred reserve base of 200,000,000 tons of 60 to 85 percent wollastonite is a world class deposit. Over the long term, the potential economic increase in the Inyo County tax base which would not be realized if the Hunter Mountain deposit were not developed would exceed $20,000,000 (1985) worth of product. Because wollastonite fires as a porcellan glaze at a much lower temperature than conventional silica glazes currently used, the energy savings from the use of this mineral as a glaze would be lost, in addition to the potential loss of economic dollars related to development of the wollastonite deposits at Hunter Mountain.

Parcel Three: Pyramid Peak

Wildlife

While it could be argued the reduction in grazing and mining would reverse bighorn population losses, the historic decline in bighorn numbers within the DVNM does not support such a conclusion. Should anything catastrophic happen to the Pyramid Peak bighorn guzzler it would not be repaired or replaced.

Geology-Energy-Minerals

The transfer of this area to Park Service management would cause a moderate negative impact on future mineral exploration or development of the area. Under Park Service management minerals would no longer be managed under the unnecessary or undue degredation provisions of 43 CFR 3809 and 3802 but under the more restrictive measures of 36 CFR 9.A that are the Park Service's regulations for mining in a park or national monument. A general discussion of these impacts can be found in the GEM analysis for parcel one.

If the proposed alternative is implemented, it would have little or no effect on the development of sand and gravel, limestone, dolomite, silica, clay and zeolite and an unknown effect on the development of possible borate resources over the next 15 or 20 years.

Adequate reserves of sand and gravel are located southeast of parcel three, both north and south of Highway 190. Large hypothetical reserves of carbonate and silica resources are also located outside of the parcel in the southern Resting Spring Range (south of Highway 178). Most of the moderate potential zone for clay and zeolite lies in a Class L area northeast and outside of parcel three. The southern part of the parcel has not been drilled yet, so the quality and quantity of borates there, if any, is not known. Borate occurrence are known two miles to the west and two miles to the south (McAllister, 1970).

Under BLM management, 80 percent of parcel three is recommended for inclusion in the National Wilderness Preservation System. If it were designated wilderness, validity exams would be conducted, and it would be closed to further mineral entry. Regarding the BLM multiple use class M portion of parcel three (the 20 percent which the BLM recommends as nonsuitable for wilderness), the consequence of mine closure or the precluding of the development of domestic mineral deposits is a loss of jobs and tax base, and the overseas transport of these items and our technology and dollars to purchase the needed commodities.

About 500 acres of the Class M area in parcel three has moderate potential for the occurrence of borates. It is anticipated that within the next 15 or 20 years a plan of operations for borate exploration drilling would be precluded because the area would be withdrawn from mineral entry under Park Service management. Geologic inferrence indicates that possibly 100,000 tons or more of 25 percent B_2O_3 borate resources valued at one million dollars or more would remain undiscovered in what is presently the BLM class M portion. Mining would be open pit, underground, or solution mining depending on the depth of the deposit. Economics of open pit mining would be severely effected due to higher standards for reclamation in National Park Service managed areas. The economic conditions may be so changed as to render the area uneconomic.

Parcel Four: Greenwater Valley

Wildlife

Current bighorn management would not change significantly. However, future management options would be severely restricted. Since the Park Service places such an extremely low priority on habitat enhancement (such as guzzler construction), the possibility of a bighorn reintroduction, at any future date, is virtually nil. This then reduces the overall amount of bighorn habitat, statewide, that the CDFG has to work with in it's efforts to restore healthy bighorn herds to their historic ranges.

Botany

Impacts are similar to those described in Alternative A: Parcel Three.

Cultural Resources

The discussion of potential impacts on cultural resources anticipated under Alternative A is the same as the discussion for parcel one, except that livestock use and burros are not factors in the Pyramid Peak parcel.

Lands

NPS land acquisition priorities within this parcel would be low, since this area is not within the central or main valley area. It is not known what specific methods of acquisition, if any, would be identified in a future Land Protection Plan. State lands would likely be acquired on an opportunistic basis, probably included in a large BLM-State land exchange.

Transfer of land administration from the BLM to the Park Service would have no effect on the National Wildlife Federation-related preliminary injunction order (see parcel one discussion). NPS would simply inherit the R-1250 classification and could not revoke it or take actions inconsistent with it.

Noise and visual impacts associated with existing military aircraft operations are expected to continue, as the Department of Defense airspace users would not agree to modify the current 200-foot AGL over the transferred lands. Self imposition of a 3000-foot AGL floor over the transferred lands is considered by DoD to have an unacceptable adverse impact on military flight operations and training requirements.

Since material sites rights-of-way LA-0164240 and R-1483 and electric distribution line right-of-way R-06979 are on the parcel periphery, immediate attempts of phase-out are not anticipated. Interior electric distribution line rights-of-way R-01247 and R-316 would likely be identified for short-term phase-out, since the mines they served are closed. There would be no modification or other effects on the rights-of-way for State Highways 127 and 178. Approximately one-half mile of Inyo County Road 5005 (within Section 6, T.21N., R.6E., SBM and Section 31, T.22N., R.6E., SBM) may be closed. The Lost Section Road would probably remain open, since the existing adjacent portion of the monument is a designated back-country camp area, with a continuation of this road (open 4-wheel drive route).

NPS management would be inconsistent with applicable Open Space elements of the Inyo County General Plan. Wilderness management would be significantly more prohibitive and restrictive on land uses than the Inyo County "Natural Resource Lands" prescription of multiple land use.

Management Presence

The parcel would be patrolled by a ranger based in Shoshone. Frequency of patrol would be a minimum of twice a week. Thus, the frequency would not increase--and could decrease slightly--from the present daily patrols provided by BLM's expanded ranger force (although it would be significantly higher than the presence provided by BLM prior to the ranger expansion).

Resources staff specialists likely would visit the parcel for spring surveys once per year, and at other times on an as needed basis. This would be a significant increase over time presently spent in the parcel by BLM resources staff.

Wilderness

Wilderness characteristics in the long term would be enhanced. Based upon the management goals in the draft GMP and EIS for DVNM, virtually the entire parcel (with the exception of existing well-used routes of travel) would be included within the 1974 wilderness recommendation for DVNM that is currently before Congress (under the No Action alternative, about 20 percent would become designated wilderness).

Wilderness values would also be enhanced in the short term if transferred to DVNM. Upon transfer to the monument (and until official wilderness designation), the portion of the area that is eligible for wilderness designation would be managed as administratively-endorsed wilderness. If the parcel were to remain with BLM, the lands within the Greenwater Valley and Ibex Hills Wilderness Study Areas would be managed under BLM's interim management policy until official designation. The administrative endorsement within DVNM is much more restrictive than the IMP. The IMP allows for a multitude of uses, including mining, within wilderness study areas as long as impacts are not substantially noticeable in the area as a whole.

After official designation, certain recreational activities (that are permissible in BLM wilderness) are not allowed in National Park wilderness. These include hunting, rock collecting, and trapping. Current use levels of these activities are low.

Recreation

Recreational uses of parcel four would not change appreciably. Including this parcel within Death Valley National Monument would draw special attention to it. However, due to it's location on the outer fringes of the monument, use levels would remain low.

Backcountry off-highway vehicle access would continue to be available, primarily in the northern and southeastern portions. Some existing open routes may be closed, however, based upon specific management goals of the monument. In addition, the BLM permits vehicle use within some desert washes; NPS would not allow such use.

The northern tip of parcel four contains the Greenwater Mining District. There are several access routes in this area. The accessibility of the area to the general public would remain very limited, however, because it can be reached by four-wheel-drive roads only. The major access routes in the southern portion of the parcel would also most likely remain available for vehicular use. Because these routes are close to State Route 127, use would remain at current levels.

The GMP proposes to locate a campground immediately west of parcel four, within Rhodes Wash in the monument. The GMP also indicates that the county claimed road in the central portion of the parcel would be excluded from wilderness designation. The road and campground would increase accessibility and serve as departure points for primitive types of recreation. However, extreme temperatures and lack of available water would limit such uses to one or two day hikes.

Geology-Energy-Minerals

The transfer of this area to Park Service management would cause significant negative impact on future mineral exploration or development of the area as a whole. Under Park Service management minerals would no longer be managed under the unnecessary or undue degredation provisions of 43 CFR 3809 and 3802 but under the more restrictive measures of 36 CFR 9.A that are the Park Service's regulations for mining in a park or national monument. A general discussion of these impacts can be found in the GEM analysis for parcel one.

The transfer would have little or no effect on the development of mineral resources in the northern part of the parcel, but would have a negative impact on the development of precious metals, talc and sand and gravel in the southern one third of the area.

Concern has been raised over the removal of lands from mineral entry without adequate studies, which should include detailed geochemical analysis, drilling, and testing (Johnson, 1988). For example, regarding the 28 square miles having speculative resources of copper in the northern half of the area, a State report had this to say: "It may be sufficient to justify the cost of a preliminary geochemical investigation to determine the extent of the association of copper with the monzonite or with the rhyolitic intrusive rocks, and geophysical prospecting to extend the gravity anomaly and to determine the depth of fill over monzonitic rocks in Greenwater Valley" (Taylor, 1986, p. 41).

The following discussion on impacts is restricted to areas of high mineral development potential.

About $1^{1}/_{2}$ square miles near the Rusty Pick mine (southwest corner of Parcel Four) and under BLM multiple use class M has high potential for the development of talc. It is anticipated that at least one talc mine would be precluded based on a past mining proposal. This would result in the loss of up to 10,000 tons of talc worth $500,000. In the second high potential talc area, Ibex Hills, it is likely that one operation at least twice as large as the deposits near the Rusty Pick mine would be precluded. This is because of the more numerous talc occurrences.

The large, high potential zone for precious and base metals would probably produce at least one small gold mine over the next 10 years if left under multiple use management. Values not recovered because of the transfer may approach 10 to 20 million dollars over the next 10 to 20 years.

The potential for metallic mineral development near the Rusty Pick mine is low over the next 15 to 20 years due to the low price of silver and base metals and the fact that the Rusty Pick mine is on State land.

The potential for the development of bentonite is low over the next 15 to 20 years. It seems probable that the existing pit east of the parcel can supply the anticipated demand for the foreseeable future.

The two Caltrans material sites would be extinguished by relinquishment or condemnation. Therefore, an estimated 500,000 cubic yards of sand and gravel would no longer be available from these sites for the maintenance of Highway 127. The United States would be required to compensate Caltrans for the cost of obtaining aggregate elsewhere.

Sand and gravel are a Group IV commodity, of local and regional importance. However, they are not major minerals of international commerce (Horton, 1983, p. 2) and are not one of the 75 minerals in the strategic and critical stockpile. The probable level of demand is forecast to grow at an average annual rate of two percent to the year 2000. In 1987 construction sand and gravel output increased two percent. Shortages in urban and industrialized areas are expected to continue to increase due to local zoning regulations and land development alternatives. Shortages for highway use may result from nonimpairment requirements for wilderness study areas.

It is unlikely that geothermal energy would be developed in the parcel within the next 15 to 20 years because of the sparse population.

Parcel Five: Pinto Basin

Wildlife

At present, 4,000 acres of a desert tortoise concentrations area centered in the monument are administered by BLM. The transfer of the Pinto Basin parcel to the Joshua Tree National Monument would bring half of those 4,000 acres into the monument. OHVs occasionally travel cross-country in the parcel. Because the frequency of ranger patrol would increase in this area, the portion of the population that would be transferred would benefit slightly from the reduction of OHV use.

There would be no impact on desert bighorn sheep.

Botany

Since the use of the parcel would most probably be primitive wilderness hiking and backpacking, the transfer is not expected to affect any potential population of either the foxtail cactus or the California snakebush.

Livestock Grazing

The vegetation of the parcel is not suitable for grazing, and therefore no provision were made to create grazing allotments in this area in the CDCA Plan. There is no known future need of the parcel for grazing, and therefore no effect is expected from the transfer.

Cultural Resources

The discussion of potential impacts on cultural resources would be the same as the discussion for parcel one, although livestock and burros are not factors in this parcel.

Lands

No land actions exist within this area, and so none would be affected by the proposed transfer to the Park Service. This area is presently classified in the California Desert Plan as a limited use area. This type of land use does not differ greatly from the use that would be allowed by the Park Service should the transfer be consummated.

Transfer of land administration from the BLM to the Park Service would have no effect on the National Wildlife Federation-related preliminary injunction order (see parcel one discussion). NPS would simply inherit the classification made pursuant to the Classification and Multiple Use Act of 1964 and could not revoke it or take actions inconsistent with it.

Management Presence

The parcel would be patrolled by rangers once or twice per week during the high use season (October through May), a rate that would drop to three to four times per month during the summer. This would be a significant increase over the presence provided by BLM's ranger force, which rarely enters the parcel. Resources staff specialists likely would visit the parcel for spring surveys once per year, and at other times on an as needed basis. This also would be a significant increase over time presently spent in the parcel by BLM resources staff.

Recreation

The transfer of this 4,480 acre parcel to the NPS would mean that activities such as OHV use, roadside camping, shooting, hunting and rockhounding would be eliminated. However, the resultant change from the current situation would be be slight. The area has very few vehicle routes of travel, and does not attract much general recreation use.

Management for primitive recreation would have a positive effect on hiking, backpacking, and other non-motorized or vehicle dependent activities. The parcel's location (it adjoins existing wilderness) would enhance the quality of experiences for these primitive, non-confined recreation uses.

Wilderness

Although none of this former WSA was recommeded as suitable for wilderness designation, the wilderness values that were identifed would be protected. Wilderness management of this area would enhance wildlife habitat by providing another area of restricted human activities. Because the adjacent monument lands are recommended for wilderness designation, and because of the lack of developments in this parcel, it is likely that it will be recommended as suitable for designation as wilderness by the Park Service. Therefore, wilderness qualities would not be impaired.

Geology-Energy-Minerals

Under Park Service management minerals would no longer be managed under the unnecessary or undue degredation provisions of 43 CFR 3809 and 3802 but under the more restrictive measures of 36 CFR 9.A that are the Park Service's regulations for mining in a park or national monument. A general discussion of these impacts can be found in the GEM analysis for parcel one.

There would be few impacts on mineral resources. Only a small portion of the Pinto Basin has a moderate potential for copper, gold, and lead (map 3-8). As of December 1987 only two mining claims were located in this area. Since development of the two small moderate potential areas is improbable at this time, closing the area to mineral entry will have only negligible impacts on socioeconomic conditions in Riverside County.

ALTERNATIVE B:
MODIFIED GREENWATER VALLEY PARCEL

Impacts on wildlife, botany, cultural resources, and management presence would be as described for Alternative A: Greenwater Valley Parcel.

In general, there would be relatively little difference in the effects of a transfer between this alternative and the proposed action, with one exception. That exception concerns minerals. Fifty percent of the area of high potential for precious and base metals (in the Ibex Hills) would continue to be available for mineral development. Two areas with a high potential for sand and gravel, and a large area with moderate potential for geothermal energy development, would remain outside the parcel.

Lands

Impacts would be the same as those described for Alternative A: Parcel Four with the following exceptions. The non-federal land acquisition effort would be slightly reduced. Nearly all existing right-of-way phase-out efforts would be eliminated. Monument boundary identification and management effectiveness would be reduced compared to alternative A

Wilderness

Wilderness values would be maintained to a lesser degree than Alternative A: Parcel Four. The portion of Alternative A: Parcel Four which would not be transfered under Alternative B because of high mineral values would remain available for multiple uses other than wilderness.

Recreation

The effect upon recreational use would be similar to the proposed action, although it would be somewhat more positive for motorized vehicle recreation than the proposed action in the eastern Ibex Hills. This is because that area would remain available for off-highway vehicle use.

Geology-Energy-Minerals

The transfer would have little or no effect on the development of barite, copper, and silver resources in the northern two thirds of the area within the foreseeable future.

About $1^{1}/_{2}$ square miles near the Rusty Pick mine (in the southwest corner of the modified Greenwater Valley parcel) and under BLM multiple use class M has high potential for the development of talc. It is anticipated that at least one talc mine would be precluded based on a past mining proposal. This would result in the loss of up to 10,000 tons of talc worth $500,000. In the second high potential talc area, Ibex Hills, it is likely that one operation at least twice as large as the deposits near the Rusty Pick mine would be precluded. This is because of the more numerous talc occurrences.

About 50 percent of the large, high potential zone for precious and base metals would not be transfered. Therefore, there is a low to moderate possibility that this area could produce at least one small gold mine over the next 10 years since it would be left under multiple use management. Values not recovered because of the transfer may approach 5 to 10 million dollars over the next 10 to 20 years.

The potential for metallic mineral development near the Rusty Pick mine is low over the next 15 to 20 years due to the low price of silver and base metals and the fact that the Rusty Pick mine is on State land.

The potential for the development of bentonite is low over the next 15 to 20 years. It seems probable that the existing pit east of the parcel can supply the anticipated demand for the foreseeable future.

The two Caltrans material sites would be outside of the modified parcel boundaries, and could continue operating. Therefore, an estimated 500,000 cubic yards of sand and gravel would continue to be available from these sites for the maintenance of Highway 127.

It is unlikely that geothermal energy would be developed in the parcel within the next 15 to 20 years because of the sparse population.

ALTERNATIVE C:
EAGLE MOUNTAINS EXPANSION

This alternative differs significantly in certain areas from the proposed action. In particular, mineral development near the Black Eagle mine would be curtailed. Additional restrictions on recreation access would be imposed. However, the entirety of the BLM portion of a Desert tortoise concentration area would be transferred to the monument, which would not iccur under the proposed action.

Wildlife

At present, 4,000 acres of a desert tortoise concentrations area centered in the monument are administered by BLM. The transfer of the Eagle Mountains to the Joshua Tree National Monument would bring the entire concentration area into the monument. Given the greater frequency of ranger patrol, the portion of the population that would be transferred should benefit from the reduction of OHV use.

The transfer would have both beneficial and detrimental impacts on desert bighorn sheep. On the positive side the transfer would effectively eliminate loss of habitat from mining activity. Conversely, the transfer would also mean foregoing the enhancement of potential mountain sheep habitat with artificial watering sources. At this time only the area around Buzzard Spring and Eagle Tank can be considered watered sheep range (9,000 acres or 44 percent). The remaining 56 percent of identified potential mountain sheep range proposed for exchange is water-deficient.

Botany

Since the use of the parcel under NPS management would most probably be primitive wilderness hiking and backpacking, the transfer is not expected to affect any potential population of either the foxtail cactus or the California snakebush.

Livestock Grazing

The vegetation of the parcel is not suitable for grazing, and therefore no provision were made to create grazing allotments in this area in the CDCA Plan. There is no known future need of the parcel for grazing, and therefore no effect is expected from the transfer.

Cultural Resources

The discussion of potential impacts on cultural resources would be the same as the discussion for parcel one, although livestock and burros are not factors in this parcel.

Lands

The bulk of the areas classified in the California Desert Plan for M and I management are affected by mining interests. This type of land use directly conflicts with the proposed Park Service management as a National Monument. The two right-of-ways issued to Kaiser Steel Corporation would not be affected by the transfer. The right-of-ways were issued for an indefinite term, and therefore they are valid until Kaiser no longer wants them, whether the area is under the administration of the BLM or the Park Service.

Park Service management would be consistent with the Riverside County Plan, except for those areas devoted to mineral development and/or exploration.

Management Presence

The parcel would be patrolled by rangers once or twice per week during the high use season (October through May), a rate that would drop to three to four times per month during the summer. This would be a significant increase over the presence provided by BLM's ranger force, which rarely enters the parcel. Resources staff specialists likely would visit the parcel for spring surveys once per year, and at other times on an as needed basis. This also would be a significant increase over time presently spent in the parcel by BLM resources staff.

Recreation

Under NPS management, recreational use patterns would change significantly. Opportunities for vehicle-dependent activities would be severely curtailed or completely eliminated. Non-motorized, primitive forms of recreation would be enhanced and would grow.

Access into the parcel would be limted to the Black Eagle Mine Road. About six miles of this road (between the current monument boundry and a locked gate at a public/private land boundary) would remain open to the public. All other vehicle trails and ways in the parcel would be closed. This limited access combined with road closures would significantly reduce the attractiveness of the area to OHV touring.

Other activities would be eliminated. Monument regulations would prohibit roadside camping, hunting, shooting and rockhounding.

Opportunities for hiking, backpacking and other primitive, non-motorized uses would be enhanced. These activities would benefit from both a lack of competition for available space and the elimination of non-conforming recreation uses. Hiking and backpacking levels would increase. The overall use would remain low in the future, however, due to the area's remoteness and the need for a four-wheel-drive vehicle to access the area.

Wilderness

All wilderness values would be protected. Wilderness management of the northern portion of the WSA would enhance bighorn sheep habitat and other special resource values by restricting uses. Under the original plan, this area was identified for intensive use.

Wilderness designation of this WSA would also enhance the bighorn sheep and desert tortoise habitats and protect the sensitive plant species and cultural resources found in the area.

No wilderness qualities, either in the portion added to the monument or in those portions remaining in the BLM Eagle Mountain WSA, would be degraded.

Geology-Energy-Minerals

The transfer of this area to Park Service management would cause significant negative impact on future mineral exploration or development of the area. Under Park Service management minerals would no longer be managed under the unnecessary or undue degredation provisions of 43 CFR 3809 and 3802 but under the more restrictive measures of 36 CFR 9.A that are the Park Service's regulations for mining in a park or national monument. A general discussion of these impacts can be found in the GEM analysis for parcel one.

The Eagle Mountains alternative would cause significant impact on both mineral resources and the potential and planned development of those resources. The portion of the alternative that lies inside the Eagle Mountain WSA has been classified as having a high to moderate potential for metallic mineral resources by the USGS and the BOM in Open File Report 84-631 (1984). Under Park Service management these mineral resources would be removed from location under the mining law and operations with vested rights would be impacted economically because of higher restoration and mining costs required by the Park Service.

The portion of this alternative on the non-WSA CDCA lands has a known history of mining on patented and unpatented mining claims. A large portion of the Kaiser Steel Mine and large numbers of unpatented mining claims would be adversely affected by the transfer. Since Park Service regulations apply equally to private and public lands, the known mineral resources on patented mining claims at the Kaiser mine would be equally impacted.

The transfer may also preclude significant beneficial socioeconomic impacts. Since the closure of the Kaiser Iron Mine the Desert Center area has become economically depressed. Planned development by Kaiser Steel Corporation would help to revitalize the economy of the eastern side of Riverside County through the creation of new jobs. Planned development would also generate significant revenue for the county and the local area.

ALTERNATIVE D:
MODIFIED PYRAMID PEAK PARCEL

Impacts on wildlife, botany, cultural resources, lands, management presence, recreation, and geology-energy-minerals would be as described by Alternative A: Parcel Three.

Impacts on wilderness are similar to Alternative A: Parcel Three. However, transfer of the additional acreage to DVNM results in a more definable boundary between BLM and DVNM. In addition, wilderness manageability of the balance of the Funeral Mountains WSA, which would remain with BLM, would be enhanced. This is because the Funeral Mountains WSA would retain a more compact, manageable shape. The original NPS proposal left a long, narrow strip of BLM wilderness extending to the north of the body of the WSA. Alternative B transfers this strip to the Park Service. The additional area would neither enhance nor degrade the manageability of the transfer parcel, while it's transfer would ensure the adjacent BLM wilderness's manageability.

ALTERNATIVE E: NO ACTION

Parcel One: North Death Valley

Wildlife

Under the CDCA Plan, the habitat conditions at Sand and Little Sand Spring would improve under the designation as an Area of Critical Environmental Concern (ACEC)(map 3-1), but implementation of the appropriate protective actions to achieve the desired level of protection may occur at a slower rate than if the area were managed by the National Park Service. Degradation of Sand Spring may occur due to mining or mining-related activities. The most likely use of the area would be for millsite activities involving the diversion and use of surface water. A millsite claim was filed at Sand Spring in 1981 to use the water for drilling at claims to the northeast, and for a gold recovery operation. A considerable amount of riparian and aquatic habitat at this site is outside the boundary of the wilderness study area and, therefore, is not afforded the mandatory protection of lands under wilderness review.

Upon completion of the plan for the ACEC at Sand and Little Sand Spring, the Bureau would construct a protective fence around the aquatic and riparian habitats at Little Sand Spring. The pond at Sand Spring would be maintained and completely fenced to exclude burros and cattle. A water source, using water from the pond, would be developed outside the fenced area to provide water for drifting cattle and burros, and for occasional bighorn if they happen to seek water at the site. Such a water source is necessary to prevent horses and burros from damaging the protective fence in their attempt to obtain drinking water.

Burros would eventually be removed from the entire area through live-trapping at the water sources. The probable date for "total" removal is not known at this time, but could occur within the next several years (the last burro live-trapping at Sand Spring occurred in 1981). This would be effective in protecting the springs, but only if BLM removal efforts are frequent and effective enough to keep out burros. Should burros be effectively eliminated from these two springs, burro use of adjacent mountainous habitat in the Last Chance Range would be greatly reduced, as would drift into the present monument (especially in the Grapevine Springs area).

Botany

The ACEC Plan for Big and Little Sand Springs would be completed in 1989. Currently, the UPA, with the exception of Big Sand Spring itself, is well protected and thriving in the absence of burro and cattle trampling. The Sodaville milk vetch population is likewise healthy and expanding in range and numbers. The proposed exclosure around Big Sand Spring, with an external watering trough, would allow the recovery and expansion of the wet meadow. The future use of the millsite claim is unknown, but the BLM has full authority to preserve and protect the UPA and rare plant population under the CDCA Plan of 1980 and the BLM's sensitive plant policy.

Livestock Grazing

Grazing use would continue to be managed under the provisions of the current grazing regulations and the guidance of the CDCA Plan. Under the CDCA Plan, an allotment management plan would be prepared and implemented. The AMP would address resource conflicts, propose management to resolve the issues and prescribe monitoring studies. Due to the low use that occurs in this area, there would be few changes in livestock use.

Wild Horse and Burros

All burros would be removed from this parcel.

Cultural Resources

To the extent that current use remains unchanged, cultural resources would continue to deteriorate slowly from both natural processes and/or contemporary land uses. All authorized surface disturbing actions on public lands would continue to be subject to the relevant cultural resource laws and regulations, with avoidance or mitigation of impacts on significant properties.

Cultural resources are not threatened by any actions specifically authorized by BLM; however, they are threatened by recreational artifact collectors, campers, and wild burros. Unauthorized collecting is an on-going problem throughout the desert. BLM uses several methods to control these activities; the most common in this area is patrol by rangers. Recent staff increases, particularly the expansion of BLM's ranger force, have and would continue to improve BLM's ability to control this type of impact.

Camping has also affected one site; however, the degree of disturbance has remained the same for the past ten years and appears to be stable. Wild burros have also disturbed this site during visits to the on-site water source, and BLM would build a trough away from the site.

Lands

With the exception of the 11,680 acres to be managed under BLM classes L and M, management of the majority of the area under the CDCA Plan guidelines would be similar to NPS management. Military overflights at altitudes less than 3,000 feet would continue.

Management Presence

BLM's expanded ranger force would continue to patrol the parcel on a twice-weekly basis. This would be a significant increase over the frequency of patrol provided in the past.

The rate of visitation of BLM staff specialists would continue to be dependant on an as-needed basis. Recent staff increases would increase the rate of visitation slightly, as more time could be spent in the field during the processing of any given application or project.

Recreation

Many variables, such as possible wilderness designation for all of part of the parcel or the paving of the Big Pine/Death Valley Road, make accurate visitation projection difficult. The BLM has no current plans to build any new recreational access routes, campgrounds, interpretive facilities or other developments in the parcel. Recreational use would continue to grow slowly in this area.

Wilderness

IMP guidelines would continue to be followed by the Bureau in both recommended suitable and nonsuitable WSAs. The IMP guidelines would continue to be followed until Congress made decisions on permanent wilderness designation.

Geology-Energy-Minerals

General Discussion: Certain management aspects of the no action alternative would affect all five of the parcels in the same manner. A discussion of these follows. The discussion applies not only to the North Death Valley parcel, but to the other four parcels as well. Mining activity would be regulated under the 43 CFR 3802 and 3809 regulations, resulting in the following:

a. The areas would be left open to mineral entry as per the Mining Law of 1872 and subsequent Federal laws regulating mineral excavation.

   The minor effects of location, such as access, staking and maintenance of monuments would continue. The potential for surface disturbance would be greater in the event that new mineral resources were discovered. The potential for expansion of employment and revenue for Inyo County would not be diminished.

b. Surface impacts from mineral development would be regulated by the 43 CFR 3809 or 43 CFR 3802 regulations.

   Surface disturbance from activities allowed under the general mining laws on mining claims may not be denied by the Secretary of Interior except in cases where an environmental analysis has determined that the potential for undue and unnecessary degradation and impairment of wilderness values exist. The BLM surface management regulations are most effective and mitigate impacts for operations with a total surface disturbance of greater than five acres, or for all surface disturbing activity in designated wilderness areas, wilderness study areas, and areas under the CDCA Plan's multiple use class L.

c. Bonding for operations outside of WSAs would continue to be at the discretion of the authorized officer. Mandatory bonding for operations within WSAs would continue to be required.

d. Claim holders would be required to perform assessment work.

   The potential for surface disturbance would be greater than if the parcels were transfered. The diligence requirement necessary to develop the property would continue.

e. Claim validities would only be scheduled to verify valid existing rights in wilderness study areas and elements of the National Wilderness System prior to surface disturbing activities.

f. Access would be regulated under the 43 CFR 3809 or 3802 regulations. A special use fee is not required for access.

g. Water use would be regulated under the 43 CFR 3809 or 3802 criteria in conjunction with the appropriate state agencies.

Parcel Two: Hunter Mountain

Wildlife

Under the CDCA Plan the parcel would continue to be within the Hunter Mountain Grazing Allotment and subject to cattle grazing. Cattle access to the water sources, riparian habitats and the parcel in general could be modified under an allotment management plan or habitat management plan (see below, Livestock Grazing, for a discussion of measures that are being considered for implementation in the allotment management plan). Since neither of these have been completed, it has not yet been determined how the concerns of viral disease transmission from cattle to bighorn, the social impact of cattle on deer and bighorn, and the impacts on riparian and aquatic habitats would be alleviated.

Under the no action alternative, cattle may continue to use the parcel and drift of these animals into Death Valley National Monument would continue. This may result in the construction of a barbed-wire fence along the boundary of Death Valley National Monument to prevent cattle drift. Such a fence, even though designed to allow for the passage of deer and bighorn, may inhibit movement of these two native ungulates to an unknown degree.

Hunting opportunity and a regulated harvest of quail, chukar and deer from the parcel would continue under CDFG regulations. There would probably be no detectible change in populations of chukar and quail due to hunting. There are no data or studies in this area that provide insight into the effect of hunting on deer. However, hunting could be resulting in a greater percentage of does in the population than would occur under natural conditions.

BLM would continue to work through its cooperative management policy with the California Department of Fish and Game.

Livestock Grazing

Grazing use would continue to be managed under the provisions of the current grazing regulations and the guidance of the CDCA Plan. An AMP would be completed and implemented. The AMP would address resource conflicts, propose management to resolve the issues and prescribe monitoring studies. Reduced stocking rates in the Hunter Mountain parcel and boundary fencing would eliminate livestock drift onto the Death Valley National Monument. Management would be implemented to reduce conflicts between cattle and wildlife. Actions would include defering grazing use of Hunter Mountain until after spring greenup, excluding grazing from a portion of the bighorn sheep range, providing additional water sources, the installation of protective fencing around certain springs (probably including Jackass, Deadhorse, and Quali springs). Because burros have been, and would continue to be, removed from the parcel, the current low utilization rates would continue, resulting in an upward trend in vegetation condition.

Wild Horse and Burro

Current management guidelines call for removal of all horses and burros from the parcel. A few burros may wander onto the parcel from the Lee Flat Herd Management Area. That herd would be maintained at less than 30 head.

Cultural Resources

To the extent that current use remains unchanged, cultural resources could continue to deteriorate slowly, from both natural processes and/or contemporary land uses. All authorized surface disturbing actions on public lands would continue to be subject to the relevant cultural resource laws and regulations, with avoidance or mitigation of impacts on significant properties.

The cultural resources have been affected by grazing cattle, wild horses and burros, recreational collectors and campers (at several undesignated sites along the Hunter Mountain road). A number of studies on the effect of cattle on lithic scatters shows that cattle damage artifacts and displace them vertically and horizontally. Cattle also affect cultural resource sites by reducing plant cover, which promotes soil erosion and consequently the loss of artifacts and soils from archaeological sites. Since these studies, which were done in several western states and under varying range conditions, show adverse effects on grazing and cultural resources, it is inferred that grazing on Hunter Mountain has also adversely affected sites. Grazing has a relatively long history in the area and is an on-going multiple-use; therefore, there are no planned actions to curtail grazing.

It can be assumed that wild horses and burros have had an affect on cultural resources similar to that of cattle. BLM is vigorously pursuing capture and removal of animals over a set herd size.

Unauthorized collection of artifacts and vandalism are continual problems which are random events in time and place and are therefore difficult to control. BLM uses several methods to discourage these activities; the most common in this area is patrol by rangers. The recent increase in the BLM ranger force would help to lessen this type of impact. One of the prehistoric sites has been used and continues to be used as a modern camp. Disturbance to cultural resources has already occurred and future camping would create no further disturbance unless the intensity of use increases.

Lands

With the exception of about 3,000 acres of BLM class L in the northeastern portion of the parcel, management of the majority of the area would be similar to NPS management. The Hunter Mountain road could be improved. Military overflights at altitudes of less than 3,000 feet would continue.

Management Presence

BLM's expanded ranger force would continue to patrol the parcel three times per week. This would be a significant increase over the frequency of patrol provided in the past.

The rate of visitation of BLM staff specialists would continue to be dependant on an as-needed basis. Recent staff increases would increase the rate of visitation a moderate amount, as more time could be spent in the field during the processing of any given application or project.

Recreation

The no action alternative would continue to allow about 1,500 visitor use days per year of BLM monitored recreation use on the Hunter Mountain parcel. Hunting, trapping and target shooting would be allowed under state and local restrictions. Camping would be allowed along existing open roads.

Wilderness

Impacts would be the same as under the No Action Alternative for the North Death Valley parcel.

Geology-Energy-Minerals

Minerals would continue to be managed under the unnecessary or undue degradation provisions of 43 CFR 3809 and 3802. A general discussion of these impacts can be found in the GEM analysis for Alternative E, Parcel One.

Parcel Three: Pyramid Peak

Wildlife

BLM would retain management authority over all of the lands proposed for transfer. Thus, management options would be maximized. Seriously damaged guzzlers could be replaced, new guzzlers could be built, and bighorn transplants could be conducted as necessary and appropriate. Nonetheless, because the BLM has management responsibility over such a small proportion of the Funeral Mountains, this area would receive a low funding priority in the Department of Fish and Game (Cooperrider, 1988).

Botany

The effects of continued BLM management would be slight in the short term. As indicated in the discussion of the effects of the proposed action, management of sensitive resources within DVNM and outside is essentially the same. Long term effects would occur as a result of surface disturbance authorized by BLM under the general land laws and mining laws, and could result in minor adverse effects on localized plant populations.

Cultural Resources

To the extent that current use remains unchanged, cultural resources would continue to deteriorate slowly from both natural processes and/or contemporary land uses. All authorized surface disturbing actions on public lands would continue to be subject to the relevant cultural resource laws and regulations, with avoidance or mitigation of impacts on significant properties.

The primary protection for cultural resources is the relative lack of intensive contemporary use. As use increases over the next 20 years, management attention would increase to channel conflicting land uses away from areas containing significant cultural resources. This would be aided by the recent expansion of BLM's ranger force, due to which the frequency of ranger patrol of the parcel would be significantly increased.

Lands

CDCA Plan prescriptions for the Pyramid Peak parcel are very similar to probable NPS actions described in Alternative A. The only difference is that the bajada adjacent to State Highway 190 would not be designated as wilderness, but would be managed under the CDCA Plan multiple use class M guidelines. As a result, sand and gravel resources along the highway would be available for extraction. This should be of little short-term importance, however, as more readily available sites occur nearby which should satisfy demand over the next 20 years.

Management Presence

BLM's expanded ranger force would continue to patrol the parcel on a daily basis. This would be a significant increase over the frequency of patrol provided in the past.

The rate of visitation of BLM staff specialists would continue to be dependant on an as-needed basis. Recent staff increases would increase the rate of visitation slightly, as more time could be spent in the field during the processing of any given application or project.

Wilderness

Wilderness values would decline over the long term in the Pyramid Peak parcel. Under BLM management smaller acreages would be designated wilderness, with the balance of the area available for multiple uses other than wilderness. Under National Park Service Management, 100 percent of the Pyramid Peak Parcel would ultimately be designated wilderness. The BLM is has recommended 80 percent of the Pyramid Peak Parcel for wilderness designation.

Recreation

Impacts on the Pyramid Peak area would be very similar to Alternative A: Parcel Three. The majority of this parcel is recommended by BLM as suitable for wilderness designation. Low levels of wilderness types of recreational uses would continue to be the primary use of the area.

Geology-Energy-Minerals

Minerals would continue to be managed under the unnecessary or undue degredation provisions of 43 CFR 3809 and 3802. A general discussion of these impacts can be found in the GEM analysis for Alternative E, Parcel One.

Within the next 15 to 20 years, it is anticipated that BLM would receive a plan of operations for borate exploration drilling. If borates are found, the southwest part of the parcel probably would not be developed until after 2015 due to existing borate reserves at Boron, Ryan and the Billy Mine in Death Valley. See Alternative A: Parcel Three for a discussion of anticipated impacts.

Because of the supply and demand situation, it is not likely that carbonate rocks, silica, clay, zeolites or sand and gravel would be developed in the CDCA Plan multiple use class M area for the next 20 years.

Parcel Four: Greenwater Valley

Wildlife

Under this alternative the BLM would retain management authority over all of the lands proposed for transfer. Thus, management options would be maximized. Seriously damaged guzzlers could be replaced, new guzzlers could be built, and bighorn transplants could be conducted as necessary and appropriate. Nonetheless, it should be pointed out that because the BLM has management responsibility over such a small proportion of the Black Mountains, this areas would receive a low funding priority (Cooperrider, 1988).

The current multiple-use class and mining operations in the Ibex Hills are detrimental to wildlife in general and particularly to bighorn sheep. The predominantly class I (intensive use) designation would tend to encourage mineral development of this area.

Botany

The possible long term protective effects of DVNM management described in Alternative A: Parcel Three would not be realized under this alternative.

Cultural Resources

To the extent that current use remains unchanged, cultural resources would continue to deteriorate slowly from both natural processes and/or contemporary land uses. All authorized surface disturbing actions on public lands would continue to be subject to the relevant cultural resource laws and regulations, with avoidance or mitigation of impacts on significant properties.

The primary protection for cultural resources is the relative lack of intensive contemporary use. As use increases over the next 20 years, management attention would increase to channel conflicting land uses away from areas containing significant cultural resources. This would be aided by the recent expansion of BLM's ranger force, due to which the frequency of ranger patrol of the parcel would be significantly increased.

Lands

Desert Plan prescriptions vary significantly from the probable NPS actions described for the Greenwater Valley parcel in Alternative A. Only about 20 percent of the area is recommended as suitable for wilderness designation, with associated land acquisition, right-of-way phase-out, and land use restrictions. Continued management under CDCA Plan multiple use classes L, M and I guidelines on the remaining 80 percent of the area would generally be consistent with the applicable open space elements of the Inyo County General Plan. Management ineffectiveness due to split jurisdiction and existing non-descript monument boundaries would be perpetuated.

Management Presence

BLM's expanded ranger force would continue to patrol the parcel daily. This would be a significant increase over the frequency of patrol provided in the past.

The rate of visitation of BLM staff specialists would continue to be dependant on an as-needed basis. Recent staff increases would increase the rate of visitation slightly, as more time could be spent in the field during the processing of any given application or project.

Wilderness

Only 20 percent of the parcel would be recomended for wilderness designation. The remaining 80 percent would be available for multiple uses other than wilderness. As a result, wilderness values would decline over the long term in most of the parcel.

Recreation

Primitive types of recreation use within the portion of the Greenwater Valley area that the BLM has recommended as suitable for wilderness designation are expected to increase slightly. Historically, once specific areas are designated wilderness, there are increases in visitor use. Over the long term, however, use levels are expected to remain low due to extreme temperatures, lack of water, and relative isolation of the area.

Recreational use patterns and levels within the balance of the Greenwater Valley area are not expected to change from the present. Low levels of off-highway vehicle use and primitive types of recreation would continue. Any additional mineral development in the southern portion of the area could increase the number of access routes available for off-highway vehicle use.

Geology-Energy-Minerals

Minerals would continue to be managed under the unnecessary or undue degredation provisions of 43 CFR 3809 and 3802. A general discussion of these impacts can be found in the GEM analysis for Alternative E, Parcel One.

Under this alternative, about 92,000 acres of land would be managed for multiple use, including operation of the mining laws. About 25,000 acres of class C land may ultimately become designated as wilderness. Mining activity would be concentrated in the southern one third of the parcel.

About $1^1/_2$ square miles near the Rusty Pick mine (southwest corner of Parcel Four) and under BLM multiple use class M has high potential for the development of talc. It is anticipated that at least one talc mine would be developed, based on a past mining proposal. Mining, if authorized, would be by trenching, resulting in a series of trenches up to 300 feet long by 50 feet wide and 40 feet deep over a total distance of 2,000 feet. Production over a five-year period would produce up to 10,000 tons of talc worth $500,000. In the second high potential talc area, Ibex Hills, the development scenario would be for an operation sometime in the next 10 to 20 years at least twice as large as the deposits near the Rusty Pick mine. This is because of the more numerous talc occurrences.

The large, high potential zone for precious and base metals would probably produce at least one small gold mine over the next 10 years if left under multiple use management. Mining would probably result in extending drifts and stopes from existing underground workings in addition to creating perhaps a thousand feet of new workings along vein deposits. Adits and drifts would likely be six feet wide by eight feet high. A mill would have to be built and a few hundred thousand tons of waste rock and tailings would have to be piled. Recovered values may approach 10 to 20 million dollars over the next 10 to 20 years.

The potential for metallic mineral development near the Rusty Pick mine is low over the next 15 to 20 years due to the low price of silver and base metals and the fact that the Rusty Pick mine is on State land.

The two Caltrans material sites would be outside of the modified parcel boundaries, and could continue operating. Therefore, an estimated 500,000 cubic yards of sand and gravel would continue to be available from these sites for the maintenance of Highway 127.

It is unlikely that geothermal energy would be developed in the parcel within the next 15 to 20 years because of the sparse population.

Parcel Five: Pinto Basin

Wildlife

Desert Tortoise: The eastern portion of the desert tortoise concentration area would continue to be managed by the BLM. Under existing guidance from the CDCA Plan, OHV use would be allowed on existing ways. This, then, allows some small potential for loss of tortoises from vehicular use in the ways that transverse the area.

Mountain sheep: As noted in Alternative A, both transfer and retention of these lands would have beneficial and negative impacts. The major negative impact of retention would be the continued threat of habitat loss due to mining activity until (and unless) it is designated as wilderness by Congress. Positive impacts from retention include the continued opportunity to develop additional water sources in the large areas of water-deficient mountain sheep range.

Botany

If the recommended BLM Eagle Mountain Wilderness were to be approved, the vegetation of all of the area covered under Alternative A, and most of the area covered under Alternative C, would benefit from a level of protection similar to the protection that would result from a transfer to the monument.

Livestock Grazing

Since there is no current or scheduled livestock grazing in the area, there would be no effect under Alternative D.

Wild Horse and Burro

Since there are no wild horses or burros in the area, there would be no effect under Alternative E.

Cultural Resources

To the extent that current use remains unchanged, cultural resources would continue to deteriorate slowly from both natural processes and/or contemporary land uses. All authorized surface disturbing actions on public lands would continue to be subject to the relevant cultural resource laws and regulations, with avoidance or mitigation of impacts on significant properties.

The majority of the geographical area of alternatives A and C falls within the boundaries of the Eagle Mountain Wilderness Study Area. The area of alternative A is not recommended for wilderness designation. If wilderness status is denied, multiple use pressures would continue to retain the potential for impacts on cultural resources.

Approximately half of the area of alternative C has been recommended for wilderness designation. If Congress grants wilderness status to the recommended area of alternative C, much of the potential for vandalism and other human impacts on cultural resources would be curtailed. The BLM's reckent ranger force increases would also provide for more effective management and control of these impacts.

Lands

Existing management would remain the same. There would be no conflicts with mining interests, as would most probably happen under Alternative C. In turn, the area would continue to be administered by the BLM under the concept of multiple use management, with discretionary authority. The Park Service is not a multiple use agency, and therefore certain discretionary actions would not be permitted.

Management Presence

BLM's rangers would rarely have occasion to enter the area, other than for monthly monitoring of the WSAs. Thus, the frequency of patrol would not noticeably increase over past levels.

The rate of visitation of BLM staff specialists would continue to be dependant on an as-needed basis. Recent staff increases could increase the rate of visitation slightly, but because of the extremely low level of activities in this area, visitation would still be infrequent.

Recreation

Balanced management for a variety of recreational uses would continue. Activities as described in Affected Environment, Parcel Five would continue into the forseeable future. Slight increases in all use categories can be expected. However, the area is currently under-utilized and has the capacity to absorb much greater levels of use without diminishing the quality of the experiences available.

Any future wilderness designations in the Black Mountains would signficantly alter the recreational use patterns. If BLM recomendations are followed, the southern portion of the study area would become designated wilderness. Under this scenario, OHV touring and sightseeing opportunities would be largely reduced. Vehicle use would be restricted to the Black Eagle Mine Road and a few other mining roads that branch from it. Access to the area would be limited to the Black Eagle Mine Road through JTNM. Lack of access and fewer available vehicle routes would diminish the attraction of the area and OHV touring recreation levels would drop.

Other activities would be similarly affected due to reduced access and area of use. Target shooting and roadside camping would be curtailed. Rockhounding would still occur in the most popular areas (Storm Jade and Rainbow Mine environs), but would suffer somewhat because vehicle access to new areas to explore would not be available. Habitat for quail and chukar would improve but lack of access would preclude hunting in the Big Wash drainage.

Hiking, backpacking and other privitive uses would be enhanced because of the elimination of motorized and vehicle dependent activities. The quality of the experience would also benefit fromn the parcel's location next to existing wilderness in JTNM.

Wilderness

Current management practices as outlined in the CDCA Plan would continue. The Eagle Mountain and Pinto Basin WSAs would contiue to be managed under the IMP, and wilderness values in both areas would be protected until such time as Congress acts on the Bureau's recommendations. If these two areas are designated, their wilderness values would be protected indefinitely.

If the northern portion of the Eagle Mountan WSA, which is not recomended as suitable, is not designated by Congress, most wilderness values would be eventually lost due to intensive use of the area. This would also hold true for the former Pinto Basin WSA if Congress does not designate it as a wilderness area.

Geology-Energy-Minerals

Minerals would continue to be managed under the unnecessary or undue degredation provisions of 43 CFR 3809 and 3802. A general discussion of these impacts can be found in the GEM analysis for Alternative E, Parcel One.

MITIGATION MEASURE

Approximately 5,000 acres in the northwestern corner of the North Death Valley parcel would not be transfered. This area, primarily class M, contains the highly mineralized area around Crater. Its exclusion would prevent the inclusion of an area with a large number of developments and other intrusions into the monument, and would allow the continued development of mineral resources near Crater.

The modified boundary is indicated on map 2-1.

CHAPTER 5

CONSULTATION and COORDINATION

CHAPTER V

CONSULTATION AND COORDINATION

On May 19, 1988 the Western Regional Office of the National Park Service submitted a proposal to the California State Office of the Bureau of Land Management to transfer five parcels of land totalling 272,849 acres from BLM jurisdiction to the Death Valley and Joshua Tree National Monuments.

A notice of intent to prepare an environmental impact statement was announced in the Federal Register on May 31, 1988. The notice included a description of the Park Service proposal, and the times and locations of five public scoping meetings.

Immediately after the publication of the notice of intent, a news release concerning the project and announcing the scoping meetings was released. The news release was sent to media throughout southern California, and to the California Desert District general mailing list (about 6,000 individuals and organizations).

Five public scoping meetings were held between June 14 and June 17. Two meetings were held in Riverside on June 14; about 25 persons attended each meeting. Other meetings were held in Palm Springs (June 15; 20 attendees), Ridgecrest (June 16; 35 attendees), and Independence (June 17; 55 attendees).

The stated purpose of the meetings was to allow the public to identify those issues that should be addressed in the environmental impact statement. Issues were suggested by the audience, and written on flip charts. A combined list of the issues identified at the meetings is presented in Appendix F. The meeting (or meetings) at which an issue was identified is identified by the following code: Riv A (Riverside morning), Riv B (Riverside evening), PS (Palm Springs), RD (Ridgecrest), and I (Independence).

Letters were also accepted from the public during the scoping process. Over 50 letters were received by BLM; sentiments and thoughts were generally either were those presented in Appendix F, or were opinions concerning whether or not the transfer should proceed.

APPENDICES

APPENDIX A
LIST OF PREPARERS

CALIFORNIA DESERT DISTRICT OFFICE

Staff in this office were responsible for coordination of field offices and quality control, and for preparing all sections of the document other than chapters three and four.

Name	Position	Team Assignment
William Haigh	Chief, Planning Staff	EIS Team Leader
Larry Foreman	Wildlife Biologist	Wildlife Overview
Garth Portillo	Archaeologist	Archaeology Overview
Douglas Romoli	Environmental Specialist	Lands Overview
Robert Waiwood	Geologist	GEM Overview
Clara Stapp	Illustrator	Maps, Cover

RIDGECREST RESOURCE AREA

Staff in this office were responsible for the preparation of sections concerning the North Death Valley and Hunter Mountain parcels.

Name	Position	Team Assignment
Greg Thomsen	Chief, Resources Staff	Sub-team leader
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Glenn Harris	Range Conservationist	Livestock Grazing
Joan Oxendine	Archaeologist	Cultural Resources
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Staff in this office were responsible for the preparation of sections concerning the Pyramid Peak and Greenwater Valley parcels.

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Staff in this office were responsible for review and quality control.

Name	Position	Team Assignment
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Jack Mills	Environmental Specialist	Reviewer
Mike Ferguson	Wildlife Biologist	Reviewer
Bob Anderson	Associate State Director, Minerals Division	Reviewer

APPENDIX B
GLOSSARY

ADIT: A nearly horizontal passageway from the surface by which a mine is entered.

ADMINISTRATIVELY ENDORSED WILDERNESS: A National Park Service policy of wilderness management, in lieu of Congressionally designated wilderness.

ALLOTMENT: An area of land where one or more operators graze their livestock It generally consists of public lands, but may include parcels of private or state-owned lands. The number of livestock and the period of use are stipulated for each allotment. An allotment may consist of several pastures of may have only one pasture.

ANIMAL UNIT MONTH (AUM): (1) The amount of forage or feed required by an animal unit (i.e., one mature 1,000-pound cow or five domestic sheep) for one month. (2) Tenure of one animal-unit for one month.

AUTHORIZATION OF RECORD:

BARITE: Sulphate of barium, $BaSO_4$, also called Heavy-spar, from its high specific gravity. When finely ground, it is used as an ingredient in certain paints, and as a drilling additive.

BASELINE STUDIES: Inventories designed to document conditions at a certain time against which monitoring studies will later be compared.

BENTONITE: A sedimentary rock formed from the alteration in place of volcanic ash. Largely composed of the clay mineral montmorillonite. The rock commonly has a great ability to absorb water and swell.

BORATE: A mineral characterized by a fundamental structure of BO_3^3. Borates are used chiefly in glass, fiberglass, ceramics, agricultural chemicals, and pharmaceuticals.

CARBONATE ROCK: A rock consisting chiefly of carbonate minerals such as limestone or dolomite.

CARRYING CAPACITY: The maximum stocking rate possible without inducing damage to vegetation or related resources. It may vary from year to year on the same area due to fluctuating forage production).

DEVONIAN: A period of the Paleozoic era (after the Silurian and before the Mississipian) thought to have covered a span of time between 400 and 345 million years ago.

DOLOMITE: A common rock-forming mineral: $CaMg\ (CO_3)_2$.

DRIFT: An underground horizontal passage which follows the vein.

ENDANGERED: Any animal species in danger of extinction throughout all or a significant portion of its range.

ETHNOGRAPHIC: The study of aboriginal peoples.

EXCLOSURE: An area fenced to exclude animals.

FLPMA: The Federal Land Policy and Management Act of 1976 (Public Law 94-579, 90 Stat 2743, 43 USC 1701).

FORAGE ALLOCATION: The amount of forage designated for a specific use. Use may be by wildlife and livestock, or for mulch or plant vigor.

GEOGLYPH: Large rock alignments constructed by the prehistoric inhabitants of the desert. These alignments can be representational or abstract. Their function and interpretation is unknown.

GUZZLER: A device designed to collect and store rainwater for use by wildlife.

HYDROTHERMAL: A mineral deposit precipitated from a hot agneous solution.

INTERIM MANAGEMENT POLICY (IMP): A BLM policy designed to prevent impairment (deterioration) of wilderness values between the wilderness study phase and official Congressional wilderness designation.

LODE CLAIMS: A mining claim 1,500 feet long in the direcltion of the vein, and extending not more than 300 feet on each side of the middle of the vein at the surface, and located on a vein or lode "of quartz or other rock in place beraring gold, silver, cinnobar, lead, tin, copper, or other valuable deposits" (30 United States Code 23).

MASTER TITLE PLATS: Public records showing the status of public land.

MESOZOIC: An era of geologic time, from the end of the Paleozoic to the beginning of the Cenozoic, or from about 225 to about 65 million years ago.

MONZONITE: A group of plutonic rocks containing approximately equal amounts of alkali feldspar and plagioclase, little or no quartz, and commonly angite as the main mafic mineral.

MULTIPLE USE CLASS (MUC): Classification of different type and level or degree of use which is permitted within a particular geographic area. The classifications were assigned by the CDCA Plan. There are four classes: class C (controlled), class L (limited), class M (moderate), and class I (Intensive). All public lands in the transfer parcels are zoned into one or another of the classes. A detailed description of each class follows:

Class C indicates the area being "preliminarily recommended" as suitable for wilderness designation.

Class L (limited use) protects sensitive, natural, scenic, ecological resource values. These lands are managed to provide for generally lower- intensity, carefully controlled multiple use of resources while ensuring that sensitive values are not significantly diminished.

Class M (moderate use) is based upon a controlled balance between higher intensity use and protection of public lands. A wide variety of present and future uses are provided for. This class is designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause.

Class I (intensive use) is designed to provide for concentrated use of the lands and resources to meet human needs. Reasonable protection would be provided for sensitive natural and cultural values. Mitigation of impacts on resources and rehabilitation of impacts areas would occur insofar as possible.

PLACER CLAIM: All forms of mineral deposit, other than veins of quartz or other rock in place, acquired by location and recordation under the authority of the General Mining Law of 1872.

PORPHRY COPPER DEPOSIT: A large body of rock that contains disseminated chalcopyrite and other sulfide minerals.

PRECAMBRIAN: All rocks formed before the Cambrian, or prior to 570 million years ago.

PUBLIC WATER RESERVE: Water sources (i.e. springs) not available for disposal under agricultural land laws or non-metalliferous (and occasionally metalliferous) mineral entry.

PYROCLASTIC: Pertaining to clastic rock material formed by volcanic explosion or aerial expulsion from a volcanic vent.

RARE: A generic term for species of limited distribution and/or abundance.

RHYOLITE: A group of extrusive igneous rocks with phenocrysts of quartz and alkali feldspar in a glassy to cryptocrystalline ground mass.

SECTION 106 CONSULTATION: Consultation between Federal agencies and the appropriate State Historic Preservation Officer to ensure adequate consideration is given to cultural resources in Federal actions. The consultation process is mandated by the National Historic Preservation Act of 1966.

SENSITIVE: A BLM designation for species which require special management attention to prevent them from being placed on the Federal endangered species list. It includes State-listed species and candidates for Federal listing.

SKARNS: A type of silicate rock composed of minerals that generally replace carbonate rock when in contact with intrusive rocks.

STOPE: An excavation from which the ore has been extracted, either above or below a level, in a series of steps.

STRONTIUM: A metallic element of the calcium group. In nature, always combined chiefly in strontianite (carbonite) and celesite (sulphate).

TAYLOR GRAZING ACT: The basic legislation authorizing the BLM to issue grazing leases and permits on public land.

TERTIARY: A period of time between 65 and 3 to 2 million years ago.

THREATENED: Any species threateded with becoming endangered.

TRANSECT: A sample of predetermined size and quality (usually linear) of a habitat or system.

TUFFACEOUS: Rock containing consolidated pyroclastic ejects.

UTILIZATION: The amount of the current year's forage production that is consumed or destroyed by animals.

ZEOLITE: A large group of white to colorless (sometimes red or yellow) hydrous aluminosilicates that are analogous in composition to the feldspars. Uses include ammonia and heavy metal adsorbtion.

ZOOMORPH: A motif in prehistoric rock art thought to represent an animal.

APPENDIX C
LIST OF ACCRONYMS

ACEC	Area of Critical Environmental Concern
AGL	Above Ground Level
AMP	Allotment Management Plan
AUM	Animal Unit Month
BLM	Bureau of Land Management
BOM	Bureau of Mines
CDCA	California Desert Conservation Area
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CFR	Code of Federal Regulations
DoD	Department of Defense
DVNM	Death Valley National Monument
EIS	Environmental Impact Statement
GEM	Geology-Energy-Minerals
GRA	GEM Resource Area
HMA	Herd Management Area
IMP	Interim Management Policy
JTNM	Joshua Tree National Monument
MUC	Multiple Use Class
NEPA	National Environmental Policy Act
NWF	National Wildlife Federation
NPS	National Park Service
OHV	Off Highway Vehicle
OFR	Open File Report
PL	Public Law
PWR	Public Water Reserve
UPA	Unusual Plant Assemblage
US	United States
USGS	United States Geological Survey
WSA	Wilderness Study Area

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APPENDIX E
SUMMARY OF ISSUES RAISED AT SCOPING MEETINGS

Wildlife

- Ecosystem (RivA)
  - Define "ecosystem" (I)
  - Ecosystem boundaries (PS, RD)
  - Clarify--"Perfect Death Valley as an Ecosystem" (RD)
- Wildlife management--NPS. Deer, Sheep (RivA, RivB, PS, RD)
  - Track record of NPS
  - Options available to wildlife managers
  - Sheep and deer numbers
  - BLM & Park wilderness; BLM & Park nonwilderness
- Facts on conflicts between cattle & bighorn (RD, I)
  - Bighorn are in every range in Inyo County. Why close Hunter Mountain because of bighorn?
  - Are lions detrimental to bighorns? Which agency can best handle?
- Water Development (RivA, RivB, PS, RD, I)
  - Guzzler Development
  - Guzzler Maintenance
- WL habitat improvement in general (RivA) (PS)

- States rights--Fish and Wildlife management (RivA)
- Scientific research--ability to continue (RivB)
- T&E species (RD)
- Are roads adequate boundaries for wildlife management? (RD, I)
- Hunting--management tool (RD)
  - Game birds
- Detrimental/positive effects of mining, grazing on wildlife/plants (I)
- Springs need to be managed to protect native species (I)
- Will deer be eliminated under park? Entered in 1949. (I)

Botany

- Many current boundaries not natural boundaries. Rich variety of plants need to be protected (I)
  - Milkvetch at Sand Spring
  - Hunter Mtn has several rare species
  - Red Amphitheater has several rare species
  - Funeral Mts have several rare species
  - Greenwater good flower area

Livestock Grazing

- Hunter's rights (RD)
  - Would they continue under monument? (I)
- Changing Hunter Mtn boundary affects other leases--Forest Service, Los Angeles, State, and hay ranch (200 acre) (I)
- Why after 123 years is grazing on Hunter Mtn now an issue? (I)
  - Why phase out?
  - Aren't cattle indiginous/compatible?
  - Need for beef production
- Cattle trespass into park at Hunter Mtn (I)
  - How control Hunter's cattle? (RD)
- Does removal of cattle hurt environment? (I)

Wild Horse and Burro

Burro management--NPS/BLM (RivA, RD)

Cultural Res/Native American

ID and protection of archaeological and historic resources (RivB, PS)
  Archaeological resources should affect boundaries (RD)
Park designation restricts use of land (Hunter Mtn) for pinyon nut collection by Piute Shoshone (RD, I)

Lands

Airspace (Riv A, PS)
  Military use levels (altitude)
  200 above ground level vrs 3000 AGL
Inholdings & people using them (RivB, I)
Existing land uses and access and how will they be effected by management changes (PS)
  NPS management plans for the land (RD)
Explain unchanged legal boundaries (RD)
How coordinate--S-7, Death Valley General Plan, EIS? (RD)
Are FLPMA rights violated by this administrative process? (I)

Recreation

Future growth of recreation use (RivA)
B to V race (RivA)
Check chase race (RivA)
Off-highway vehicle use
  Availability of access (RivA, PS, RD)
  Road definition--describe what's there (RivB, PS)
  Identification of historical access routes--open/closed (PS)
  Will existing roads be closed by NPS? (PS)
  Would Racetrack Road remain open? Who would maintain it? (I)
  Use of washes (RivA)
  Undesignated campgrounds and NPS management (RivA, PS, RD, I)
  Existing OHV routes--continued use? (RivB)
  Would there be uncontrolled OHV use? (RivB)
States rights--recreation (RivA)

Rockhounding impacts (RivB, PS, RD)
Treasure hunting/metal detecting now allowed (RD)

Hunting and trapping (PS, I)
Effect on trappers on Hunter Mtn. (I)
  Pros/cons of elimination
Backcountry use and access (RivA)

Foreign and U.S. visitor expectations to Death Valley (RD)
Loss of tourism money
  Recreation, hiking, pinyon collection, etc.
Future "quality" of visitor use (I)
  More freedon outside parks
  Would present "quality" of Hunter Mtn for visitors be lost?
  Recreation use could improve w/no hunting (I)
Consider future needs--recreation in Death Valley (RD)

Wilderness

- Wilderness--post-transfer--vehicles (RD)

Geology-Energy-Minerals

- Mineral access (RivA, RivB)
  - Must have access. Original boundaries of NM were to exclude deposits--yet now propose to put in monument
  - Limits on heavy mining machines (PS)

- Valid existing rights on mining claims (RivB)
  - Number of valid mining claims(RD)
  - Impact on them (RD)
  - Valid claims in park would continue (I)
- Nature of grandfathered mining/restoration/bonding methods (PS)
- Fair market reimbursement of minerals lost (RivB)

- Change which would result from mining (PS)

- Mineral development studies (RivB)
- Diminishing base of minerals (RivB)
  - Withdrawal of very valuable minerals (RD)
- Future economic loss from mining restrictions (I)

- Copper potential in Greenwater--needs to be open for exploration (I)
- Hunter Mtn high potential wollastonite (RivB, I)
- Little Sand Spring borates and lithium potential (I)
- Pyramid Peak clay resources (I)
- Valid mineral rights protected (I)
- High mineral potential areas important for tax base (I)
- Document proven mineral/ore reserves (I)

Water

- Existing and future water rights (RivB, PS, RD)
  - Water rights protected for people who own them (I)
- Water rights at Hunter Mtn (I)
  - What happens?
  - Effect of park on rest of operation
  - What will happen to water sources not maintained?
- Protection of water resources (PS)
- Do watershed boundaries = proposed boundaries? (RD)
- Value of future watersheds--Greenwater and N. Death Valley (I)

Socio-Economics

- Economic impact (RivB)
  - Communities
  - People
  - Impact on Inyo County (RD)
- Evaluate financial effects (I)
  - No loss from unpatented claims
  - Hunter Mtn tax loss less than $1,500

- People impact (RivB)
- Emotional affect on area citizens of changing their life style (I)

Alternatives

- Include these alternatives ½Joshua Tree]:
  - Coxcomb Mtns (RivA, RivB, I)
  - Eagle Mtns (RivB, PS, I)
  - Little San Bernardino Mtns (RivA, I)

- Include these alternatives ½Death Valley]:
  - Greenwater Range, Greenwater Canyon (RivA)
  - North to Last Chance Springs (RivA, RivB, I)
  - Owlshead (RivA, I)
  - Eureka, Saline Valleys (RivA, RivB, RD, I)
  - Crest of Panamints (RivA, RivB, I)
  - Expanded Hunter Mtn (RivB)
  - Amargosa River Drainage (west of highway) (RivB)

- Alternatives--NPS to BLM (Riv A, RD, I))
  - "Replacement" of land transferred to NMon (RivA)

- No Action alternative (RivB, I)
  - Very detailed inventory, study needed (I)

- Why not add Nevada? (RD)
- Consider S-7 boundaries (I)
- All expansion should correspond to ecosystem, natural boundaries (I)

Management/Costs

- Compare and contrast: NPS management vrs BLM (RivA, RivB, RD)
  - Bighorn Sheep
  - Livestock
  - Burros
  - Efficient management: Who has the better record? (PS)

- Staffing--BLM and NPS abilities (PS)

- Enforcement of rules and regulations (RivB)
  - Will NPS be too tough on visitors? (PS)
- How would Hunter Mountain improve NPS mgt and accessibility? (RD)

- Proposals in NPS letter need to be examined. Some aren't true. (I)

- Available dollars: NPS vrs BLM (RivA)
  - Who would have more?
  - Where will NPS $'s come from? (RivB, RD)
  - Would budget go with land? (I)
- Total cost--economic assessment (PS)
  - What are admin costs?

Miscellaneous

- Use of thematic mapping (RivB)
    - "Spot" satellite mapping
    - Images (JPL)

- Cumulative impacts (RivB)
- Displaced impacts (RivB)
    - where
    - how much
    - total effect

- Visual resources (RivB, PS)
- Fire protection--NPS let burn (RD)

- Reasons for the land transfer (PS)
    - Why transfer under Antiquities Act? (RD)
- Pyramid Peak--why only one side of road? (RD)
- Topography--in relation to boundaries (RD)

Opinions

- When will continued expansion end? (RivA)

- New information vrs "votes" (RivB)

- Public lands belong to everyone across U.S. (RD)

- Object that there will be use fee (I)
- Only 0.5 percent of park now being used. So concentrated, don't need other areas added. (I)
- Congressional desig better than Executive for knowing how managed. (I)
- Loss of Desert Plan "balance" (I)
    - further encroachment
- Desert Plan also violated by this administrative process (I)
- Exchange doesn't benefit public--just agencies (I)

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